

62/32

A N
A C C O U N T
OF SOME OF THE MOST
REMARKABLE EVENTS

OF
T H E W A R
BETWEEN THE
PRUSSIANS, AUSTRIANS, and RUSSIANS,
FROM 1756 TO 1763:

A N D
A T R E A T I S E
On several BRANCHES of the
M I L I T A R Y A R T,
WITH PLANS AND MAPS.

Translated from the *Second Edition* of the GERMAN ORIGINAL of
J. G. T I E L K E,

B Y
Captain C. CRAUFURD,
OF THE QUEEN'S REGIMENT OF DRAGOON GUARDS,

And Captain R. CRAUFURD,
ON THE HALF PAY, OF THE 101st REGIMENT.

“ La Guerre en tous les tems fut le premier des Arts.”

L'Art de la Guerre de Main de Maître.

L O N D O N:
PRINTED FOR THE TRANSLATORS;
AND SOLD BY J. WALTER, AT HOMER'S-HEAD, CHABING-CROSS,
M.DCC.LXXXVII.



V O L. I.

C O N T E N T S.

A
DESCRIPTION
OF THE
AFFAIR OF *MAXEN*,
WITH
REMARKS ON THE POSITION;
AND
A T R E A T I S E
ON THE
ATTACK AND DEFENCE
OF *UNFORTIFIED* HEIGHTS,
ON THE
PROFILES OF POSITIONS,
AND
THE PLACING BATTERIES IN HILLY SITUATIONS,
WITH P L A N S.

A 2



TO
HIS ROYAL HIGHNESS
THE DUKE OF YORK,
BISHOP OF OSNABURGH,
LIEUTENANT GENERAL IN HIS MA-
JESTY'S SERVICE;

AND
COLONEL OF THE COLDSTREAM REGI-
MENT OF FOOT GUARDS,
&c. &c. &c. &c.

S I R,

WE are at a loss to ex-
press how highly we feel
ourselves honoured by the per-
mission, which Your Royal High-
ness has been graciously pleased
to grant us, of inscribing this

A 3 Work

Work to You. It is the greatest encouragement we could possibly receive ; and nothing can more enhance the value of a Military production, than the patronage of a Prince, who is descended from such illustrious ancestors, and is himself as much famed for his superior abilities and judgment, as He is universally adored for the innumerable good and great qualities which He possesses in so eminent a degree.

Being

DEDICATION. vii

Being always desirous to render every service in our power to the British army, and ardently anxious for its welfare and glory, we have undertaken the translation of Captain Tielke's Works, solely with a view of laying open to our brother officers an extensive field of military information. Your Royal Highness, being so well versed in the German language, and having gone through so complete and extensive a course of military studies,

A 4 is

is certainly acquainted with the excellence of the Original. We have endeavoured to do it justice as far as we are able. We are soldiers, and do not pretend to the finished elegance of professed writers ; but we have attempted to deliver a correct translation, written in a plain, military style, which we hope will answer every purpose required. Should it be honoured with Your Royal Highness's approbation, we shall consider our trouble amply repaid.

We

DEDICATION. ix

We have the honour to subscribe ourselves, with the utmost veneration and most profound esteem,

S I R,

YOUR ROYAL HIGHNESS'S

most devoted,

greatly obliged,

and most faithful Servants,

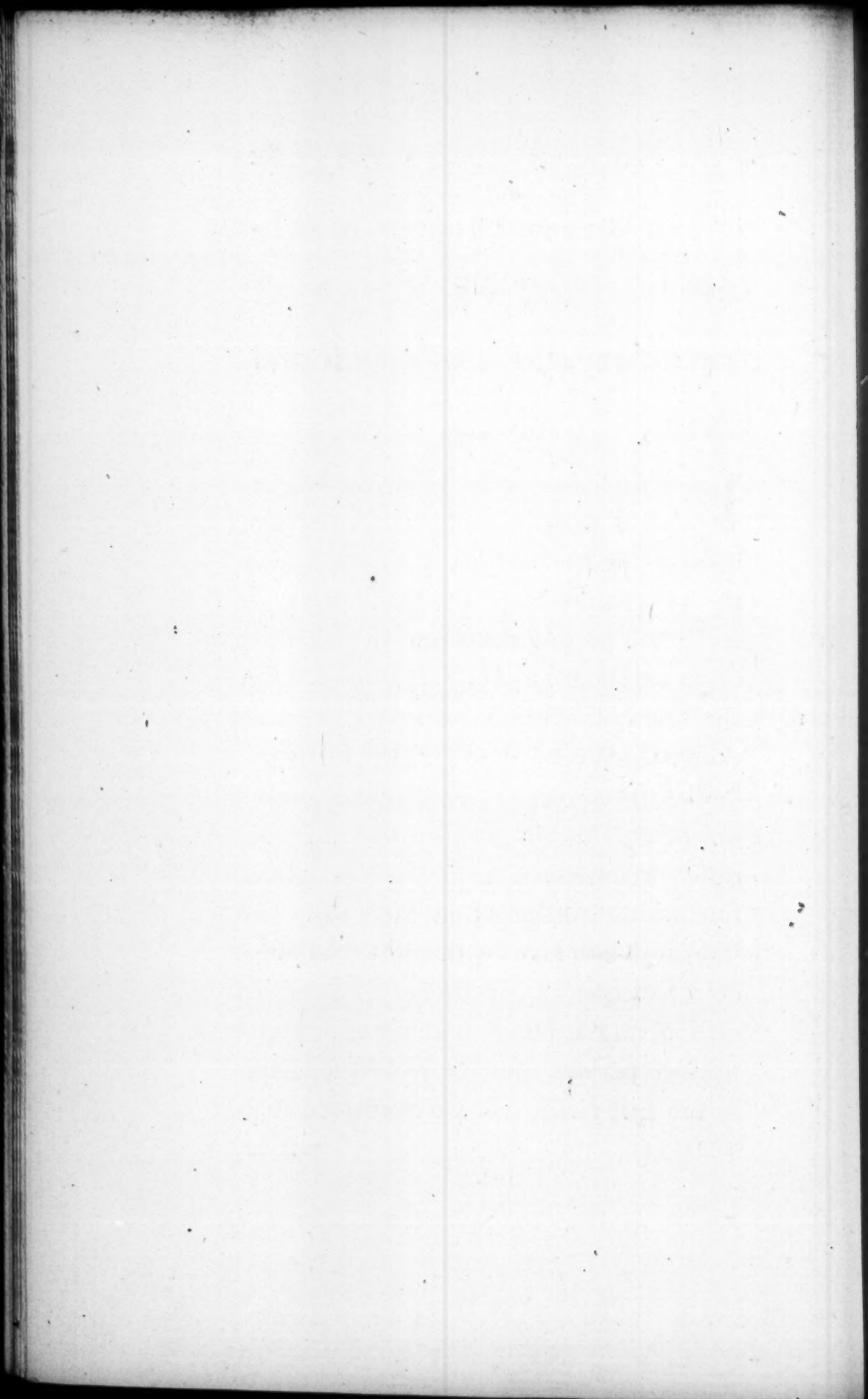
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CHARLES CRAUFURD,

Captain, Queen's Regiment of Dragoon Guards.

ROBERT CRAUFURD,

Captain on the Half Pay of the 101st Regiment.



T H E

TRANSLATORS PREFACE.

IN compliance with the wishes of several officers of rank and distinction, we have undertaken to deliver the following Translation to the Publick, solely with a view of putting the Army in possession of so excellent an Author's Works, from the study of which great benefit may be derived.—We have been particularly attentive to convey the exact literal meaning of the Author, even in the most minute circumstances, and we can answer for having succeeded in this: but our style must be judged with lenity: no flowers of eloquence, no studied elegance of diction, no harmonious sentences or high-finished periods must be looked for here. In the first place, had we attempted such
a style,

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a style, we should have failed : in the next place, had we even succeeded, we think it might have been to the disadvantage of the work.—A narration of facts, or a treatise on any science, requires none of these embellishments, and the great danger of aiming at them is, that the sense will probably fall a sacrifice to the style. We hope we have accomplished the principal point, which is the making ourselves intelligible to our brother officers.

We beg our readers not to infer, from the addition of a few notes, and the insertion of a short chapter of our own to explain our ideas on the method of taking the profiles of situations, that we pretend to step forth as critics of Captain Tielke's works. Nothing can be more contrary to our intention, being thoroughly sensible that they are far beyond the reach of our criticism. It seems, however, to be incumbent on translators to elucidate the text by explanations of their own, where-
ever

ever it may appear necessary, and we should think that they may be permitted to submit to the public decision such ideas, as may from time to time present themselves, without incurring the imputation of self-conceit or censoriousness. Should their ideas be just, the publishing them may be useful: should they be erroneous, they may still be productive of some good, by the discussions and reasonings which they will naturally occasion in the minds of those who take the trouble to examine them. It is evident, that the free discussion of every interesting subject cannot be too much promoted, as it principally leads towards accurate information and extensive knowledge: also, in order to form a just opinion ourselves, it is of the greatest use, if not absolutely necessary, to be in possession of the ideas of others on the point in question: the greater variety of opinions that we hear, the more amply are we provided with materials to correct and improve our own, and even that,
which

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which when taken collectively appears the worst, may, when analysed and weeded of its errors, afford some useful hint. These reasons have induced us to venture a few remarks, which we do in the most diffident manner; but should they appear too positive and decisive, we hope our readers will attribute such an appearance to its true and only cause, a fault in expression, not in sentiment.—We rely on their candour, and proceed free of those shackles which the dread of malicious censure imposes.

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Major Trench, 38th Regiment.
Captain Twiss, Engineers.

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Captain Tweedie, 12th Regiment Foot.
Captain Trotter, King's Regiment Dragoon Guards.
Captain Tytler, 56th Regiment.
Captain Todd, 43d Regiment.
Cornet Talbot, Queen's Regiment Dragoon Guards.
Cornet Townshend, D°. *10th Regiment Dragoon Guards.*
Cornet Thompson, King's Regiment Dragoon Guards.
Cornet Tyndall, D°. *10th Regiment Dragoon Guards.*
Ensign Tomkins, 64th Regiment. *10th Regiment Dragoon Guards.*
Ensign Thomas, 10th Regiment Foot. *10th Regiment Dragoon Guards.*

V.

Lieutenant Colonel Vyse, King's Regiment Dragoon
Guards.
Captain Villettes, 10th Regiment Dragoons.
Ensign Vandeleur, 48th Regiment.

W.

Lieutenant General Warde.
Colonel Williamson, Deputy Adjutant General.
Lieutenant Colonel Walker, Royal Artillery.
Lieutenant Colonel Whyte, 6th Regiment Foot.
Lieutenant Colonel Wollocombe, Queen's Royal Re-
giment Foot.

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Major Waugh.

Major Waller, King's Regiment Dragoon Guards.

Major Wauchope, 50th Regiment.

The Honourable Major Walpole, 13th Regiment
Dragoons.

Major Willey, 3d Regiment Horse.

Captain Warham, Queen's Regiment Dragoon Guards.

Captain Webb, Coldstream Regiment Guards.

Captain Watfon, 3d Regiment Dragoons.

Captain Warde, 2d Troop Horse Grenadier Guards.

Captain Wilson, 39th Regiment.

Captain Winchefter, 20th Regiment.

Captain Westenra, 18th Regiment Dragoons.

Captain Waller, 3d Regiment Dragoons.

Captain White, 25th Regiment.

Captain Wright, D^o.

Captain Wilkinfon, 67th Regiment.

Captain Wilson, D^o.

Lieutenant Wright, 15th Regiment Dragoons.

Lieutenant Whitaker, 3d Regiment Dragoons.

Lieutenant Wintour, D^o.

Lieutenant Wilson, Queen's Regiment Light Dra-
goons.

Lieutenant Wade, 3d Regiment Dragoon Guards.

Lieutenant Walmsley, Royal Regiment Dragoons.

Lieutenant Wilfon, 39th Regiment.

A LIST OF SUBSCRIBERS.

Lieutenant Wood, King's Regiment Dragoon Guards.

Lieutenant Wade, 3d Regiment Dragoons.

Lieutenant and Adjutant Williamson, 70th Regiment.

Cornet Webb, Queen's Regiment Dragoon Guards.

Cornet Wigley, 2d Regiment Dragoons.

Cornet Wright, King's Regiment Dragoon Guards.

Ensign Warde, 1st Regiment Foot Guards.

Ensign White, 48th Regiment.

Ensign Wood, 54th Regiment.

Ensign Wodrop, 57th Regiment.

Y.

The Right Honourable Sir George Yonge, Bart.
Secretary at War.

Lieutenant Colonel Yorke, 69th Regiment.

Captain Young, 13th Regiment Dragoons.

ADDI-

ADDITIONAL SUBSCRIBERS

SINCE THE FOREGOING LIST WAS PRINTED.

LIEUTENANT Colonel Charles Graham, 42d
Regiment.

Captain Robert Potts, D°.

Captain William Dickson, D°.

Captain Charles Brathwaite, Equerry to His Royal
Highness the Duke of Cumberland.

Captain Lieutenant Alexander Grant, 42d Regiment.

Lieutenant Alexander Cumine, D°.

Lieutenant Hugh Frazer, D°.

Lieutenant Henry David Frazer, D°.

Lieutenant William Frazer, D°.

Lieutenant Knott, 43d Regiment.

Ensign James Rose, 42d Regiment.

Ensign Donald M'Niven, D°.

Ensign James Blair, D°.

Ensign William Anstruther, D°.

Quarter-Master Hector M'Lean, D°.

WE insert the following Advertisement, which the Author has lately published, as it conveys a complete detail of the contents of his Works, and serves to explain his original design, which has been very generally mistaken.—It would be superfluous to translate those parts of the Advertisement that have not the above tendency ; we shall therefore omit them, and select such only as immediately relate to the points in question.

THE

AUTHOR'S ADVERTISEMENT.

THE sixth, which is the last volume of my Work, is now ready for delivery.

These six volumes form a complete Treatise upon every branch of Field Fortification, combined with and adapted to the principles of Tactics, and this is what I promised to deliver to the Publick in the Prefaces to the second and third editions of my Field Engineer. I never intimated a design, nor ever had I the least intention of writing a connected history of the seven years war.

The complete campaign of the year 1758, between the Russians and Prussians, will be
found

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found in the second volume, and that of 1761, between the Russians, Austrians, and Prussians, in the third and fifth volumes.

The particular important events which I have selected will be found as follows, viz.

*The Affair of Maxen in 1759, in the first volume; the three sieges of Schweidnitz, in 1757, 1758, and 1762—and the attack and storming of that fortress in 1761, by Marshal Loudon—in the fourth volume; and in the sixth volume will be found several descriptions of the Attacks and Defences of important posts, barricades of waggons, &c. block-houses, buildings, redoubts, and lines.—My idea, in selecting these detached pieces, has been, to elucidate by actual examples my Military Maxims, and my treatise on Field Fortification; as also to prove, in a more
immediate*

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immediate and satisfactory manner, the justness of the principles I have laid down. Examples enliven a scientifick treatise, which is otherwise apt to become dry and tiresome; moreover, they greatly tend to illustrate the precepts, and to imprint them in the memory of the Reader.

I have not confined myself merely to Field Fortification, but I have endeavoured to convey information to my readers on other branches of the military science, with which it is indispensably necessary that every officer should be acquainted.—For instance; there will be found in each volume interspersed treatises and observations on the service of artillery in the field, which has hitherto been little thought of or attended to except by officers

cers of artillery, though a competent knowledge of it is so essentially necessary for every officer. I have rendered it sufficiently clear and explicit for the instruction of such officers as do not serve in the artillery.—In the fourth volume I have endeavoured to treat of sieges in so ample and detailed a manner, and to place that part of the service in so clear a point of view, that an officer, who has never studied either fortification or artillery, may not only obtain the necessary information on this branch of the military art (an ignorance of which might turn out to his disadvantage and disgrace), but also may arrive at a sufficient degree of proficiency in it, to render essential service at a siege himself. Those likewise who are not professional men, will, by reading this volume,

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lume, be the better able to understand the accounts of sieges which they may meet with in news-papers or histories.

In the course of my Work, and particularly in the sixth volume, I have treated of Field Fortification, adapting its principles to actual experience and practice, in the most ample and detailed manner, from a fleche to the most extensive lines.—I have described all kinds of works, and shewn their defects as well as excellencies, and in what manner they may be defended or attacked.

THE

AUTHOR'S PREFACE.

THE war which broke out in the year 1756, is extremely interesting for all readers in general, when considered in an historical point of view, and it is replete with instruction for officers: but in order that a history of it may answer the wish and expectation of readers of every description, and that it may in particular prove useful to the military, it should not only be invariably authentick and impartial, but must also place in a clear point of view the secret springs of every undertaking, and the reasons for each manœuvre, as well as its issue and consequences. The reflections that are made on the conduct of the Generals and the troops, as well as the representation of that conduct, must be founded on the exact facts as they really happened, totally disgested of flattery

THE AUTHOR'S PREFACE. xlix.

flattery or prejudice, and unrestrained by any fear of offending the parties concerned. —From these circumstances it appears, that the execution of such an undertaking is almost impracticable for a private person; and indeed, were that not the case, it would be far from an advisable measure, unless half a century had elapsed since the date of the facts commented upon. It is possible, however, to avoid most of these difficulties in treating only of particular occurrences in a campaign, without entering into a connected detail of the whole operations; and by making choice of, and representing in their true colours, the most important and instructive events, a military author may furnish useful materials to the future historian, and afford such a fund of instruction to the officer, who is desirous of acquiring knowledge in his profession, that, by thoroughly studying and reflecting upon these events, he can from them deduce principles, which may serve to regulate his conduct in future (perhaps in some degree similar) situations in the field.

1 THE AUTHOR'S

We have a great number of books written on tactics, and the different branches of the military art, some of which are extremely good; but still there is a fault common to them all; they seem merely calculated for the officer of much experience, and contain so much science, and so little real practical information, that the unexperienced officer seldom finds himself much better for his study when he takes the field. I refer myself for the support of this assertion to those officers, who have entered into campaigns with no other knowledge than what they have derived from such reading. In most of these books (very few excepted) the rules and examples are not adapted to the species of the troops and nature of the ground, but the latter are made subservient to the former; or at least, what is laid down is so confined in its application, that in an hundred campaigns perhaps there may not occur one instance where it can be put in practice.

Well-

P R E F A C E. ii

Well-attested and important events do not require a high polish, nor the embellishment which the display of much science and erudition may afford them. To relate them impartially, and to examine the natural causes of their progress, from their origin to their issue, is all that is wanting. In this, however, simple as it is, many fail; for, from a desire of appearing either deeply learned or novel, they seek for the causes of events where they never existed, and labour to trace them to a remote distance, when in fact they need but allow their judgment to operate unrestrained, and they would discover them at first sight in their fullest extent.

Troops are often accused of timidity, without its ever being considered, whether they were really in a situation to do their duty or not. A meritorious commander, let him have made the very best possible disposition, is often blamed for its failure, though it may be the unavoidable consequence of some

particular accident which no human prudence could foresee. It is impossible to form a just idea of the abilities of a General from a defeat or victory, without a previous accurate examination of the dispositions that he made. Upon minute enquiry it will be found, that most actions have been determined by some unforeseen accident, and that a single occurrence, which in itself is apparently trivial when compared to the great combination of the whole, has often turned the scale.*

Convinced of these unquestionable truths, I venture to lay before the Publick, in detached pieces, the most important events of which I was an eye-witness in the war from

* This idea must not be considered in too extensive a light; for in that case it would appear as if the author meant to assert, that accident has contributed more to the success of many great Generals than the excellence of their own dispositions. The late King of Prussia's battles of Lowositz, Rosbach, Leuthen, &c. are strong proofs of the contrary; however, his losing the battle of Kollin, and his winning that of Torgau shew, that the author's remark is by no means without foundation.—*Translators.*

1756 to 1763. I shall endeavour to render them as instructive as possible for all officers, and particularly for those who serve on the staff of armies, in the capacities of Quarter Master Generals, Aides-de-Camp, &c. as also for the corps of Field Engineers. With this view I shall unfold the principal causes to which may be attributed the issue of each operation; from thence deduce maxims and observations on the art of war; and add occasional treatises on that part of this extensive science, which is immediately connected with and applicable to the event in question.—I shall not make quotations, or any extracts whatever from other authors, much less shall I attempt to criticise or refute their opinions; this I leave for others to do: and I shall also avoid touching on those parts of the military art which others before me have treated, perhaps more ably than I could. Throughout the whole I am determined to observe the strictest impartiality, and on no account to allow myself to wander from my subject into enquiries and discussions

discussions that do not immediately relate to it.

Should I, notwithstanding my inviolable attachment to the plain simple truth, by accident be led into any error; or should, in spite of all my enquiries, any circumstance of consequence (particularly relative to the army opposed to that in which I had the honour to serve) remain concealed from me, I can only say, that I shall be most thankful to any person who will take the trouble of pointing out to me my deficiencies, and of assisting me with their superior information, which, if well-grounded, I shall beg leave to insert, under their names, in the next volume of my work.

The attack and defence of fortified as well as unfortified positions have been much too slightly considered by all military authors, and I do not know of any really useful work which has these important objects for its subject. I shall therefore add to every de-
scription

P R E F A C E. iv

scription of a battle, or remarkable position, a relative treatise on the attack and defence of positions, camps, redoubts, and intrenchments; and shew the immediate application of the rules I establish on the same ground which comes actually within the given description. Each volume will be in itself entire and independant; and the whole united will, I hope, constitute a useful and complete historical and military work. I do not set out with the idea of composing a treatise for formed Generals, but I write for those officers who stand in need of instruction. I conclude, however, that my readers have already acquired some knowledge of the fundamental principles of choosing and fortifying positions; otherwise, were I to suppose them totally ignorant, I must enter too deeply into minute details, and consequently render my work tiresome and unpleasant to all those who are in possession of some information on these points.

The

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The praise or disapprobation of my readers will decide, whether or not I have attained the point I aim at, and also determine me as to the further continuance of this work, which will entirely depend on the opinion formed of it by those who are acknowledged proficients in the military science.

I have altered nothing in the body of this second edition, from a motive of respect to those who possess the first; but I shall add at the end of the volume any corrections or amendments that I may find necessary.*

* In the original there is a mistake in this part of the Preface, which we have corrected. The author says, "that he will publish the corrections and amendments of the first volume at the same time with the second volume;" whereas he adds them at the end of this, as will be seen in the sequel.—*Translators.*

E R R A T A.

Page 155. Line 20, *for b. read l.*

Page 160. Title, *for Heighths, read Heights;*

Page 182, Line 14, *for cannot, read cannon,*

SECTION

SECTION I.

DETAILED DESCRIPTION

OF THE

AFFAIR OF *MAXEN*.

Un sage Général
. . . pare tous les coups que l'Ennemi lui porte ;
Loin de le recevoir, il donne le Combat.
Le sort des assaillans est toujours favorable.

L'Art de la Guerre de Main de Maître.

THE Russian army, notwithstanding it had gained so important a victory at Franckfort on the Oder, and was reinforced by a considerable body of Austrians, retired, about the end of October 1759, contrary to all expectation, into Poland, and went into winter quarters.

B

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ters.—The King of Prussia immediately detached a corps of twenty battalions and thirty squadrons, under the command of General Hulsen, to Saxony, as a reinforcement to Prince Henry's army ; which troops arrived at Grossenhayn the 8th of November. His Majesty also, as soon as he was certain as to the further operations of the Russians, and had recovered from a slight indisposition, hastened himself to Saxony, and arrived at Torgau the 11th of November.

In consequence of these movements, Field Marshal Daun, who was opposed to Prince Henry near Schilda, saw himself under the necessity of quitting his situation on the 4th of November, and of retreating towards Dresden, as well to cover that city, as to keep open his communication with Bohemia ; which at once changed the operations of the Austrian army from the offensive to the defensive.

A Prussian

SECTION I. 3

A Prussian corps, commanded by Lieutenant General Fink, endeavoured, during the whole of this retreat, to turn the left flank of the Austrian army, and succeeded in the undertaking by a successful attack made upon General Brentano at Nossen; which obliged Marshal Daun to retire further towards Dresden. He did so; and on the 17th of November he took a very advantageous camp on the heights of Plauen, with the Plauen valley, or rather large ravine, in his front. Pl. I. a.

—This very broad and deep ravine, through which the Weiffritz stream flows, is formed by high rugged rocks on both sides: the few paths that lead up to the heights are extremely steep and narrow, of course difficult of ascent, and easily defended.—These walls of rock begin at Plauen, and extend without interruption to Potzschappel; the Windberg, a very high hill which commands the whole country, is situated at the end of the ravine; from Potzschappel to it there are

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no such inaccessible rocks, but the heights are steep and commanding, and the approaches to them very difficult.—Towards Dresden the ravine suddenly ends, and on the left of the Weißfritz the ground falls * gradually to within a small distance of the suburbs of the city; but on the right of that stream, the height on which the village of Plauen stands terminates in a small ridge, called the Hane Berg, that runs from Plauen almost to the suburbs, and resembles a breast-work.

The whole Austrian cavalry was posted in the plain between Plauen and Dresden; the right wing extending to the suburb of that city, and the left wing to the village. As this advantageous position made an attack upon the Austrian army almost impracticable, the King of Prussia endeavoured to oblige Field Marshal Daun

* In the original this is expressed so as to leave a doubt whether the ground falls towards Dresden, or rises. The fact is that it falls.—*Translators.*

to quit it, and retire towards Bohemia, by rendering his communication with that country very difficult, and cutting off his means of subsistence. To this end he sent Colonel Kleist with a corps of light troops into Bohemia, who destroyed many magazines, and levied considerable contributions. He detached General Fink, on the 15th of November, by Freyberg to Dippoldiswalda, and advanced himself with the main army to Wilddruf, Pl. 1. l; as did also General Ziethen with the advanced guard to Keffelsdorf, Pl. 1. m.

On the 16th, General Fink sent Major General Wunsch to Maxen, with half of his corps, as an advanced guard; the advanced parties of this detachment drove back, on the 18th, Major General Kleefeld of the army of the Empire * from Dohna

* It is to be observed, that this means the army composed of the troops belonging to the *different states of the Empire*, and has no connection with, or relation to, the *Austrian army*.—*Translators*.

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to Cotta. Field Marshal Daun immediately opposed to the corps at Maxen a body of light troops, under the command of Major General Brentano. Pl. I. c.— And as the Prussian corps at that place, and at Dippoldiswalda (see the order of battle, N° 2.) consisted of thirty-five squadrons and eighteen battalions, the Field Marshal saw himself under the necessity of detaching another corps, under Baron Sincere, General of the infantry *, to

* As the terms of distinction for the ranks of the Austrian Generals differ in some respects from those of other armies, we consider it as not superfluous to give the following account of them,

N° 1. Field Marshal.

2. $\left\{ \begin{array}{l} \text{In cavalry. — General der Cavallerie, or, General of} \\ \text{cavalry.} \\ \text{In infantry. — General Feldzeugmeister — General of} \\ \text{infantry.} \end{array} \right.$
3. Cavalry and infantry. — Feld Maréchal Lieutenant, Lieutenant General.
4. D° — General Feld Wachtmeister — Major General.

Translators.

Ruppchen,

Ruppchen, Pl. 1. b. in order to secure the rear of the army.

On the 17th, Lieutenant General Fink, with the remainder of his troops, followed Major General Wunsch to Maxen; but left Major General Lindstädt with three battalions and a regiment of Cuirassiers posted at Dippoldiswalda, in order to keep open his communication with Freyberg. On his arrival, he detached Major General Wunsch, with five battalions and five squadrons of Hussars, towards Dohna, Pl. 1. o, and Pl. 2. a.; also Major General Platen to Reinhardtsgrimma, with three battalions and a regiment of dragoons, Pl. 1. p, and Pl. 2. b. and posted himself with the rest of his troops at Maxen, Pl. 1. n.

After the departure of General Fink's corps from Dippoldiswalda, General Lindstädt received orders, by one of the King's Chasseurs*, to join General Fink at Maxen

* There is in Prussia a small corps of mounted Chasseurs who act as the King's messengers, and are constantly employed as such in time of war.—*Translators.*

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with the troops under his command ;
which he effected on the 19th.

The abovementioned disposition of the Prussians totally prevented any part of the Austrian army from going into cantonments, contracted and rendered their foraging very difficult, and afforded the former an opportunity of making incursions into Bohemia whenever they chose.

General Sincere's corps consisted of the following regiments, viz.

Regiment of Hussars.—Scezeny.

Dragoons.—The staff dragoons*, and young Modena.

Regiments

* In the beginning of the seven years war, the Austrians perceived that the battalions and squadrons were very much weakened by the different guards mounted over the Generals, baggage, magazines, bakery, &c. &c. ; and, in consequence, a regiment of dragoons, and one of infantry, were raised, which were called *staff regiments*, and placed under the immediate orders of the Quarter Master General.—These two regiments

Regiments of Cuirassiers. — Serbelloni,
Pretlach, Schmertzling,
old Modena.

Infantry. — Anger, Mars-
chall, Giulay, Clericy,
Ligne, Wied, Harfch,
Botta, and young Col-
lorado.

But Field Marshal Daun, in considera-
tion of these circumstances, immediately
reinforced it with the two Cuirassier re-
giments, Stampach, and Anhalt Zerbst,
and the infantry regiments, Durlach,
Haller, and Tillier, (see the order of bat-
tle, N° 1.) in order to force from Dip-
poldiswalda General Lindstädt's corps,

regiments furnished all the Generals guards (that of the
Field Marshal commanding excepted, which always consisted
of a company of grenadiers with a colour) as also all maga-
zine and baggage guards, &c. &c.—But the original idea of
this institution was at length overturned, and the first batta-
lion of the staff infantry regiment, and the staff dragoon re-
giment, were, after some time, detached promiscuously with
separate corps, of which they in general formed the advanced
posts.—*Translators.*

I

which

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which was still there, and which, from the erroneous idea he had of its strength, he expected would endeavour to maintain its post.—This post the Field Marshal was determined to take possession of, as it would facilitate his driving the Prussians from the neighbourhood of Maxen and Dohna. General Sincere's corps, therefore, received orders on the 19th, to march from Ruppchen at seven o'clock in the morning, and advance towards Dippoldiswalda. When the heads of the columns arrived at Hefelich, they discovered General Lindstädt's troops on their march from Dippoldiswalda to Maxen, the rear of which had reached Ringelsheim. It being already evening, nothing decisive could be undertaken; therefore no attempt was made to come up with them, nor any thing done, but a few shot fired out of those cannon which could be brought up the most expeditiously. About the same time the Field Marshal arrived from the main army, and took with this

corps an advantageous camp before Dippoldiswalda, the right flank of which was on the height of Maltern, and the left at Hefelich. Pl. 1. k, and Pl. 2. A.—He occupied also the town of Dippoldiswalda with three battalions of infantry.

If at the same time that General Fink marched to Maxen, a Prussian corps had been posted at Dippoldiswalda, or had General Lindstädt's, which was too weak, been considerably reinforced and ordered to remain there, Field Marshal Daun would have been very much embarrassed; for, in that case, no attack on the position of Maxen from the Reinhardtsgrimma quarter could possibly have been undertaken, without exposing the right flank to the Prussians, and thus coming between two fires. By this disposition also, the left flank of the position of Plauen would have been threatened, and consequently the Austrian army could not have afforded a sufficient detachment to attack

General

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General Fink from the side of Rohrsdorf and Wittgendorf.

I cannot myself confirm the report of General Fink's having strongly recommended to the King, to occupy in force the post of Dippoldiswalda, as I do not know whether or not it is really founded on truth. I am also ignorant of the important reasons (for important they must have been) which prevented his Majesty from taking this step; as likewise what made General Hulsen arrive too late; and it would be much too rash in me to deliver any decisive opinion on these points, without being more intimately acquainted with the views of the King, and the exact situation and condition of his armies and corps*. However, one is very naturally

* General Hulsen marched from his cantonments at Sora on the 18th instant to Hertzogswalda, the 19th to Colmnitz, and the evening of the 20th to Reichstädt, near Dippoldiswalda: his out-posts advanced almost up to that town, and the grenadier battalion of Bärtsch occupied a height with some

rally led to suppose, that the King had an accurate knowledge of the country, and concluded that General Fink would take such a position as he could at least defend till he was relieved *.

I was

some cannon. On the 21st, however, when he heard of General Fink's capture, he returned to Freyberg. The marches from Sora to Reichstädt were certainly short; but those who are acquainted with the extreme bad roads which he every where met with, and which were rendered almost impassable by snow and ice, will not accuse him of any negligence or delay.—*Author.*

* This he certainly might have done, if he had occupied the third position proposed by Captain Tielke in the sequel, had made abbatis in the Reinhardtsgrima wood, particularly across the roads, and had taken proper measures to render this, as well as all other approaches to the position, very difficult, which could have been effected in a short time by means of abbatis (and redoubts if thought necessary) as there is a great deal of wood in those environs.—Therefore, although many people may with justice deem it a fault in the King, that he did not immediately post a considerable corps at Dippoldiswalda, exclusive of General Fink's corps, yet every person, who is acquainted with the country, and has any knowledge of the military art, must behold with admiration the boldness and justness of the King's manœuvre, in detaching General Fink to Maxen: a manœuvre which deserves as much to be admired as any of the other great actions of this consummate General; and which, had it been as well executed as conceived, would have been attended with the most important and brilliant success. For had General Fink maintained

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I was told by some of the officers who were taken prisoners, that the General was on the 19th instant informed, by spies and deserters, of the attack intended to be made on him by Generals Sincere's and Brentano's corps, and that he sent a report of the same to his Majesty by a green* Hussar: but it was already too late; for a relief from the camp at Wilsdruf could not possibly arrive in less than two or three days. It is probable that the Prussians never expected that the Austrians would really have undertaken this expe-

maintained his post till General Hulsén arrived (which he could have done by occupying the ground properly, as will be seen hereafter) Marshal Daun would then have been unable to drive the Prussians from the neighbourhood of Maxen; and, as by this position they would have entirely cut off his communication with Bohemia on that side, and have rendered the famous camp of Plauen almost, if not absolutely untenable, he would have been obliged to make a precipitate retreat over the Elbe by Dresden, and probably to have retired to Bohemia by that route with the greatest part of his army. That the event of this expedition is to be attributed to the faults committed on the part of the Prussians⁶ is most certain; but the decisive fault was in the execution, not in the design: the *chief person* to be blamed, as we think, was General Fink, not the King.—*Translators.*

* Called so from the colour of their uniforms.—*Translators.*
dition;

dition; for they had received what they considered as certain intelligence, that Field Marshal Daun had orders to risk nothing more this campaign.

Before General Fink had actually occupied the position of Maxen, the King sent him a letter * by a Chasseur, in which

* This letter, I am well informed, decided his fate. For, at the conclusion of his trial, every thing appeared in his favour, and he did not stand convicted of any fault. General Ziethen, who was president of the court-martial, when he was about to close the proceedings, asked him, if he had any thing further to allege which could tend to elucidate the affair in question.—General Fink, after some pause, answered, that he remembered to have received a letter from the King previous to his occupying the post of Maxen. At General Ziethen's desire it was shewn to him;—after reading it, he looked with astonishment at General Fink, and said, he pitied him from the bottom of his heart, for that this letter gave quite a different turn to the affair, which could not be otherwise than prejudicial to him.—It was this very circumstance, (viz. his having received from the King that unlimited discretionary power) which determined the court-martial to sentence him two years imprisonment. The King had been so gracious as not to allow any mention to be made of the letter in the accusation brought against the prisoner. General Fink therefore owed his misfortune to his thus inadvertently accusing himself.—After he was released from his confinement, he went as General of infantry into the Danish service, where he died.—*Author.*

he

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he informed him, that he had received intelligence that the army of the Empire intended to act offensively against him, and left it entirely to his discretion to post himself at Maxen or not as he should judge most expedient. Notwithstanding this, however, he followed exactly the orders which he had first received, placing, perhaps, too great confidence in his own enterprising spirit, and relying too much on the good fortune that had hitherto constantly attended him: (they remarked in him this fault on his march to Maxen.) It is possible also that he may have been induced by other more cogent motives *.

* It is said, that during his march from Nossen to Dippoldiswalda, he returned to the King at the camp at Wilddrus, and represented to him the danger of posting himself at Maxen.—On which his Majesty asked him, with much apparent displeasure, If his courage failed him? The General immediately returned to his corps, and continued his march. Whoever considers the real texture of the human mind, and the powerful manner in which high courage and ambition operate upon it, will not wonder that he refused, after this, to avail himself of the King's permission to retreat.—*Author.*

Field

Field Marshal Daun apprehended that the King of Prussia might be informed of his expedition, either by the cannon-shot that were fired, or by some other means, and that he would, in consequence, attempt some attack upon the main army, which was weakened by the above-mentioned large detachments. He returned therefore to the camp at Plauen, as soon as he had ordered, that the following day, viz. the 20th, at seven o'clock in the morning, the troops at Hefelich, &c. should begin their march towards Reinhardtsgrimma.

On the 20th, as nothing extraordinary had happened in the army, and as every preparation was made in case of an attack, the Field Marshal repaired again to the corps that was moving against General Fink, in order to command it himself, and joined it just as the heads of the columns reached Ringelsheim. He was accompanied by the two Saxon Princes,

C

Albrecht

18 AFFAIR OF MAXEN.

Albrecht and Clemens.—Immediately on his arrival, Count O'Donnel, General of cavalry, took the command of the cavalry, and Baron Sincere, General of infantry, that of the infantry.

The march was performed in four columns, viz. two of the infantry and two of the cavalry. The advanced guard consisted of the hussar regiment, Scezeny, some squadrons of carabineers, a few Croats*, and a grenadier brigade of five battalions, under the command of Major General Baron Sifckowitz. (Order of battle, N° 1.)

Major General Baron Seckendorf remained on the heights of Maltern, with the regiments Botta, and young Colloredo; one squadron of Stampach; one of Anhalt Zerbst; and one hundred hussars and dragoons from the Emperor's,

* Croats are the Emperor's light infantry, composed of the inhabitants of Croatia.—*Translators.*

Esterhazy's,

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Esterhazy's, and the staff dragoon regiments, Pl. 1. u, in order to secure the rear of the Austrians, in case any Prussian troops should advance from Freyberg to Dippoldiswalda. General Brentano's corps, which before remained at the Rothenhaus, c, (or red-house) had already posted itself at Rohrsdorf, Pl. 1. S, and Pl. 2. B; and now received orders to approach Maxen, and to endeavour, as opportunity might offer, to fall on the flank and rear of General Fink's corps, whilst Field Marshal Daun attacked it in front. The Field Marshal also had concerted with the army of the Empire, part of which lay near Gieshubel, under the command of Prince Stolberg, Pl. 1. d, that they should make a detachment to the heights of Dohna, in order to enclose General Fink on that side. The Prussians had occupied Reinhardtsgrimma with a free-battalion*, and some hussars; and General Platen

* At the breaking out of a war, the King of Prussia, who keeps

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Platen was posted behind the village, Pl. 2. b.

Field Marshal Daun formed his troops before Reinhardtsgrimma in two lines, Pl. 2. C, reconnoitred the village himself, and made the advanced guard D attack it. As this approached, the Prussians both in and behind the village quitted their post (which in fact was of great importance, on account of the difficult ravine in which Reinhardtsgrimma is situated) and retreated not only into but through the wood, quite back behind Hauffdorf, Pl. 2. d. This afforded the Austrians an opportunity of reconnoitring the roads through the village and the wood, which they did immediately. They found the passes narrow, and rendered very difficult by

keeps up but a very small establishment of light infantry, always raises what they call Free-battalions, to act as light troops; these enlist voluntarily, and are composed of vagabonds of all nations and of all denominations. They are in general very bad corps, and by no means to be depended upon.—*Translators.*

the

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the frost and some little snow, as also the heights steep and extremely slippery. This induced many to think, that it was impossible to proceed with the artillery and cavalry, particularly as the horses were not rough shod. But Major Fabri of the staff or engineer corps assured the Field Marshal, that, upon close examination, he found it, though difficult, yet practicable, and would answer for the success of the attempt. The Field Marshal immediately commanded *March!* and having first occupied the wood with Croats and Hussars, which drove some Prussian troops from the first heights on the other side of it, he made the corps advance in four columns, Pl. 2. E, thro' Reinhardsgrimma, and the said wood, towards Maxen,

General Fink had occupied the heights of Maxen with three battalions, c. and four howitzes, and five twelve-pounders, N° 27. General Platen was advanced at

C 3

Hauffdorf

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Haußdorf with two battalions, Pl. 1. q, and Pl. 2. d; and the rest of the troops were drawn up against General Brentano in order of battle *, Pl. 2. e.—On the little round hill on the right of Maxen, there was a battery of four six-pounders, N° 28; and there were also two opposed to General Brentano's corps, viz. N° 29 and 30, each consisting of two twelve-pounders.

As General Fink had neglected to take possession of the two heights that lay between the Reinhardtgrimma wood and Haußdorf, his position became extremely disadvantageous; and so far from being able to oppose the Austrians in their act of debouchéing out of the wood, he could not see them; Pl. 4. Profiles 2 and 3; for, between the hills C and H on which

* The author has omitted to mention the battalion 36, posted between Maxen and Schmorßdorf in Pl. 2. k; as also the battalion 48, which was posted on the left of the line on the heights of Maxen. — *Translators.*

he stood, and the said debouché, are the heights I and F.—He was, it is true, too weak to do it, after detaching General Wunsch's corps ; but I am at a loss to comprehend why he did detach General Wunsch to such a distance from him, and why the latter did not support him. Thus far, however, Prussian officers have assured me, viz. that, on being attacked by the Austrians, General Fink sent two or three officers to General Wunsch, and required from him the two battalions of the regiment of Munchow, as a reinforcement for the heights of Maxen, but always received for answer, that they could not be spared. It would perhaps have been better if he had marched to support General Fink with his whole corps ; for, allowing that the detachment from the army of the Empire would immediately have passed the ravine formed by the Muglitz stream, which in fact, with his small number of troops, he could not at any rate in the end have

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prevented, still the increase of enemy on the confined and intersected ground of Maxen would not have rendered the situation of the Prussians much worse. The fact however was, that General Wunsch remained during the whole affair in his post near Bloßchwitz, and cannonaded that part of the army of the Empire which had advanced up to Dohna, out of four twelve-pounders in two batteries, N° 57 and 58. It turned out well for him personally, that he did not join General Fink; for, in consequence of his maintaining his post to the last, and of his not having signed the capitulation, he was not only considered as free from all responsibility, but likewise received General Fink's regiment as a recompence for his conduct.

As soon as the grenadier battalions of the advanced guard were out of the wood, they ascended the height on the right hand, where also the Field Marshal himself repaired, in order to reconnoitre the
Prussian

Prussian position, and to see in what manner it could be attacked with the greatest advantage. As these battalions came up, he made them halt just before they reached the summit of the hill, and remain under cover till the attack commenced. Captain Schroder of the Austrian artillery brought up, with all possible expedition, eight twelve-pounders on to the height, N° 23. This, it is true, was not executed without much trouble, as the ground, which is steep, was rendered very slippery by the frozen snow; it was accomplished, however, in a short time, by a judicious disposition of those who attended the guns. This battery played on the Prussian left flank, and did great execution.—The cannonade was very brisk on both sides, but the Austrian had most effect, owing to the advantage of ground. As soon as the above-mentioned battery opened, General Platen drew off his two battalions from d, back into the line in f; and the troops on the other side of Maxen fronted

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fronted in e against General Brentano's corps, which had advanced from Rohrdorf to F. Pl. 2.

The Austrian grenadiers, followed by the rest of the infantry, continued to advance in columns out of the wood, with their cavalry on their left G, and began to form, during which the cavalry covered their left flank. The Field Marshal ordered eight howitzes and six six-pounders to be brought up on to the height that lay towards the right-hand, N° 24, in front of that on which he had at first placed himself; and in N° 64 formed a battery of twenty-six cannon of different calibres, whereupon the fire became uncommonly brisk. As in the meantime General Brentano's corps had been pressing forward, and was now actually cannonading General Fink from the neighbourhood of Wittgendorf, out of eight culverins of eight pound calibre, N° 26, and N° 65, the balls of both attacks

tacks struck into the baggage placed in h, which created much disorder in the battalions, and it was consequently removed with all possible expedition to i.

After the cannonade had continued about three quarters of an hour, the Field Marshal ordered the attack I to be made on the right wing by the grenadiers commanded by General Siseckowitz, whom the Marquis d'Ainse supported with his brigade of infantry; and on the left wing by General Dombasse's brigade. The cavalry went along the bottom by Hauffsdorf, in order to avoid being much exposed to the enemy's fire. As the grenadiers were advancing to the attack, the two Prussian battalions of the left wing, viz. 48 and 51, descended from the heights of Maxen, in order to take them in their right flank g, which brought on a fire of small arms that lasted about a quarter of an hour. In order to secure this flank, the Field Marshal had left a battalion on

* the

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the eminence, N° 24, and from the battery placed there (as mentioned above) cannonaded these Prussian battalions in their left flank, at the same time that the grenadiers fired on them. They gave way, and retired in confusion into the village of Maxen.

General Fink took as a reinforcement, from the right wing of the line that was opposed to General Brentano, one grenadier battalion; and from the left of it two battalions of musketeers, N° 36, 37, and 38, and six squadrons of dragoons, N° 54. Pl. 2. 1; and made them advance through the village up to the heights of Maxen: but they were immediately thrown into confusion by those that were running away, and were beaten back, and the most of them taken prisoners. The Prussian Major Generals Rebentisch and Mosel endeavoured to form the broken troops, but their attempt was rendered fruitless by the intrepid resolution of the Austrian grenadiers,

grenadiers, which displayed itself in an astonishing manner: they kept pressing on, and the difficulty of scrambling up the steep heights, instead of diminishing inflamed their courage. The Prussian artillery, as may be seen in Profiles 2 and 3. Pl. 4. could not do much execution *; and their cavalry was of no sort of use, as the descent was so steep, and the ground on the heights so confined, and as they must have attacked down hill, whilst, on the contrary, the Austrian cavalry could more easily have advanced up hill in good order, and consequently have charged with advantage †.

The

* And therefore it appears that the Austrians had not an opportunity of displaying any uncommon proofs of their valour; for their great superiority of numbers and artillery, and the bad position of the Prussians, gave the former so very decided an advantage over the latter, that they found but little difficulty in the attack.—*Translators.*

† Captain Tielke seems to lay too much stress on the advantages which he supposes to attend the attacking up hill with the cavalry. A descent is undoubtedly rather unfavourable to the exact order of a line; however, the files and
ranks

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The Austrian infantry and carabineers gained the summits of the principal heights * K with some difficulty, but without

ranks may be kept pretty close, and the superiority in velocity and force lies certainly on the side of those who are descending. If a line of cavalry dashes pell-mell down the hill, and attacks the enemy near the bottom quite broken and in disorder, it will inevitably be defeated; but, on the other hand, should it endeavour to meet the enemy on the face of the hill, advance regularly and connectedly, and make the last effort of the attack at a short distance, (for charging as far on a descent as you do on plain ground would be apt to open the files, and consequently diminish the force of the attack) it would in all probability succeed, if its flanks were properly secured. Cavalry cannot act in defiles, thick woods, morasses, and in very enclosed and intersected situations; but it should be so exercised as to be able to manœuvre wherever it can freely extend; and hills or rough ground, without they be really impassable, should not impede its movements: unless it acquires this facility in execution, it may be justly styled the *impedimentum exercitus*.—*Translators*.

* Upon the Maxen heights there were, as represented in Pl. 2, some fleches made of the large stones, which are in that country dispersed over the fields in great quantities: but these, instead of being of use in the defence, proved disadvantageous to the Prussians. There are many who have concluded that these fleches were thrown up by General Fink's corps, and have ridiculed the idea of such defences.—However, I can positively assert, that the Prussian Major General Knobloch had constructed them the year before; and

without sustaining any considerable loss. They drove the Prussians from them, took a great part of their artillery; and then, flushed with victory, they pursued the enemy in the greatest disorder. This displeased the Field Marshal very much. He immediately checked their immoderate ardour, and formed the infantry on the heights where the Prussians had stood, in L*.—The Austrian cavalry, which had gone round the heights M, behaved with

and I have too much respect for all field engineers (should they even be Turks) to suppose for a moment, that such works could have been meant as defences. They must have been intended merely as deceptions. I remember once to have met with a camp that a Prussian corps had occupied, which in appearance was extremely strong, but on close examination I found, that the parapets were made of brush-wood, and on the batteries were mounted wooden guns.

Author.

* In this attack some of the houses of Maxen were set on fire by the Austrian howitzes. It is doubtful whether this was done intentionally by the Austrians, in order to dislodge the Prussians, or whether it happened by accident, which is often the case in such attacks. What makes the latter more probable is, that Maxen is not a village in which troops can defend themselves long, and they may be dislodged from it without the assistance of howitzes.—*Author.*

much

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much spirit, and profited on its side of the advantages that were gained.

The attack of General Brentano's corps was now becoming more and more ferocious, and General Fink made the fifteen squadrons of cuirassiers, commanded by Major Generals Bredow and Vafoldt, advance against it. In advancing they were obliged to defile between ponds*, and pass marshy meadows and thick bushes, which prevented their forming or attacking in any order; they were consequently defeated, and they retreated in confusion to n. The Austrian grenadiers followed up their victory on the Maxen side quite through the village, and kept gaining ground on the Prussians; General Brentano's corps also continued to advance in their attack.

* There do not appear any ponds or marshy meadows to impede the movement of this cavalry to the front, nor is it represented in the plan that they passed any. This is a defect in the plan.—*Translators.*

General

General Fink collected the broken troops as well as he could, and made General Lindstædt form them, and face the enemy again near Schmorfsdorf. General Brentano advanced nearer and nearer, first to N, and then to O, where he united his attack with that of Field Marshal Daun. The new Prussian position, or rather their halt, was of short duration; for the courage of the Austrians was so inflamed by their success, that nothing could stand before them. They pressed forward on the Prussians without losing a moment of time, routed them, and no sooner were they on one height than they drove them back to another. They took the greatest part of their cannon and several pairs of colours. The Prussian cavalry, which now appeared as if going to attack the Austrian infantry, was itself attacked and defeated by the Austrian, and particularly by the regiment of dragoons, young Modena, which, immediately on this happening, charged the

D Prussian

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Prussian infantry, took two battalions prisoners, and carried off colours, standards, and cannon.

Lieutenant General Count Palfy of the army of the Empire, had advanced with two regiments of hussars, Spleny and Haddick, from Zehista, Pl. 1. h, towards Dohna, Pl. 1. w; as had also Major General Kleefeld with some battalions of croats, and some Slavonian hussars, from Zoschendorf, Pl. 1. i. Prince Stolberg, and the two Major Generals Counts Efferm and Fugger, marched to support these, with the infantry regiment of the Elector of Mayence, a battalion of Darmstadt, and two of Furstenberg, besides some heavy artillery, and the Austrian dragoon regiment of Savoy, commanded by Major General de Voghera. They posted themselves near Burkardswalda, Pl. 1. f, and cannonaded General Wunsch's corps from the batteries 59, 60, 61, 62, and 63. Pl. 2.

The

The light troops under Generals Palfy and Kleefeld passed at last the ravine, and fell on the flank of General Fink's corps in its retreat. They took some colours, and joined General Brentano, in order from that side to enclose General Fink, who was pursued till it was quite dark, and retreated on to the plain near Bloschwitz and Falckenhain.—Two cavalry regiments were sent towards the Elbe, to prevent the Prussians getting off on that side, Pl. I. v.

This corps now found itself in the very worst of situations; surrounded on all sides with deep ravines, and heights occupied by the enemy's troops and artillery, without one single outlet.

The night came on, and put a stop to the further progress of the Austrians. The Field Marshal formed his troops on the heights that he had gained, and re-

D 2 remained

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mained the whole night under arms in T.

In the course of the night the Austrians were furnished with a fresh supply of ammunition from the camp of Plauen, and every thing was prepared to renew the attack on the Prussians at break of day. During these preparations, General Seckendorf reported from his post at Maltern, that his advanced piquets, consisting of hussars and dragoons, which had been stationed beyond Dippoldiswalda, were driven in, and that they had discovered, on the other side of that place, Prussian cavalry and infantry. These proved to be the corps commanded by General Hulsen, of which mention has been already made, and which arrived too late to give any assistance. The Field Marshal immediately ordered General Seckendorf to defend the defilé of Dippoldiswalda to the last; but, in case he should be absolutely

lutely forced from it by superior numbers, to retreat towards Reinhardtsgrimma and Hauffsdorf. He also posted on the heights above this last-mentioned place, six battalions and two cavalry regiments, under the command of Lieutenant General Blonquet, Pl. 1. t.; and sent orders to Count Buccow, General of the cavalry, who in the Field Marshal's absence from it had the temporary command of the army at Plauen, to detach directly Lieutenant General Baron Angern with four battalions to Ruppchen, Pl. 1. b, and to strengthen this post as far as he should judge the security of the main army required, and an encrease of the enemy's force at Dippoldiswalda might render necessary.—These measures were taken, in order to secure the communication between the troops at Maxen and Bloschwitz, and the main army, as also to cover the left flank of the latter: to effect which purposes, Lieutenant Generals Angern and Blonquet were directed to con-

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cert in conjunction the further necessary measures, and to co-operate in their execution.

I have been assured that General Fink was determined to cut through the Austrians by Schmorisdorf *, and with that intent he ordered the Major Generals to have the troops supplied with ammunition. They, however, represented to him, that the corps was much too weak for such an attempt. He caused reports to be given him in the night, and found that the whole remaining infantry amounted to no more than 2,836, as those who had been posted on the heights of Maxen were for the most part either taken prisoners or had deserted. He saw how impossible it was with so small a force, and only eight cannon, to succeed in an attack on a corps of ten times his strength, furnished with

* Perhaps towards Muhlbach and Cunnerisdorf, where he would have only met with General Reid's light troops : but the roads on that side were almost impassable.—*Author.*

a numerous artillery ; and his retreat towards Burckardswalda was cut off by the position which Prince Stolberg had taken. It was therefore resolved, that the cavalry regiments should take advantage of the night, and defile through the bottom q ; that at day-break they should cut through the light troops of the army of the Empire near Sirfen, and proceed on their march through Lug and Lockwitz *. As General Wunsch had a more accurate knowledge of these environs than any of the other officers, General Fink charged him with the execution of this manœuvre, although he served in the infantry.

An hour before it was light, Field Marshal Daun ordered, that the artillery should be brought as far forward as possible, and that the grenadiers should hold them-

* Prussian officers have assured me, that this was the General's intention. But I must own that I cannot comprehend how the cavalry was to force its way through on this side, and return by this route to the King's army.—*Author.*

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selves in readiness to renew the attack at day-break. About the same time a Prussian General arrived at the most advanced piquet, and desired to speak to the Commanding General of the Austrians. As soon as this was announced to the Field Marshal, he sent Lieutenant General Count Laschy to him, with directions to enter into no other conditions than, that the whole corps should lay down their arms, and surrender themselves prisoners of war.

* Before the Field Marshal had time to order a suspension of hostilities, the grenadiers began to cannonade the enemy, but they were immediately directed to desist. Count Laschy returned with an account, that General Fink's corps had surrendered themselves prisoners of war, and only required that they might remain in possession of their baggage; which was granted.

General

General Wunsch had, in the mean time, endeavoured to escape with all the cavalry in the manner before-mentioned; but this undertaking was attended with insurmountable difficulties. They were obliged to lead the horses singly over the ice, and they were discovered by the Austrians when but a few squadrons of hussars had passed the first ravine. The Field Marshal insisted that General Fink should include these six cavalry regiments in the capitulation; but the *latter* maintained, that General Wunsch commanded a separate corps, for which *he* could not possibly capitulate.

General Fink, during this negotiation, which he protracted as much as possible, in order to give General Wunsch more time, despatched several officers to see if the General had already passed the defilé of Sirsen, but in the presence of Count Laszy he pretended to send him orders respecting the capitulation. The latter threatened

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threatened that the cannonade would immediately begin again, if the troops under General Wunsch did not return. It appeared now utterly impossible for cavalry to force through such intersected ground, where every ravine was filled with thick bushes, and lined with croats. The last officers that General Fink sent to enquire what progress they had made, brought back word, that not half a squadron of dragoons had yet passed Sirsen, and that it was not possible for General Wunsch to succeed in his attempt. On receiving this news, General Fink, together with all the other Generals, except General Wunsch, signed the capitulation in Bloschwitz.—The troops under the command of the latter were included, and were obliged to return and lay down their arms: but he himself was at Sirsen when the capitulation was signed, which gave him an opportunity of asserting afterwards, that he had nothing at all to do with the transaction. The whole Prussian

fian corps had now surrendered themselves; and they were escorted, by some battalions and squadrons ordered for that duty, to the great garden at Dresden, there to remain properly guarded till they should be removed farther.

The Field Marshal posted his principal corps at Maxen, and General Brentano's at Dippoldiswalda, and then returned to the main army at Plauen.—The number of killed and wounded was on both sides very small.

The trophies taken by the Austrians were :

- 3 pair of silver kettle-drums.
- 1 pair of copper D°
- 24 standards.
- 96 * hand of colours.

* At first sight this number appears very great; but it must be observed, that each *company* in the Prussian service has a colour.—*Translators.*

The

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The artillery taken consisted of

25 three-pounders.

2 four D°

18 six D°

17 twelve D°

9 howitzes.

Total 71 pieces of artillery, and 44
ammunition waggons.

PRISONERS.

1 Lieutenant General—Fink.

8 Major Generals, viz. Rebentisch,
Lindstrædt, Mosel, Wunsch, Pla-
ten, Vafoldt, Bredow, and Gerf-
dorf.

9 General officers.

Colonels

Colonels	-	-	6
Lieutenant Colonels	-	-	3
Majors	-	-	32
Captains	-	-	88
First Lieutenants	-	-	168
Second D°	-	-	85
Ensigns	-	-	100
Staff	-	-	50
Artillery officers	-	-	8

Total 549 officers, including Generals.

According to the list printed by the Austrians, the sum total of the prisoners, including non-commissioned officers and privates, amounted to 14,922.—I do not consider it at all necessary to insert these lists, which are in the hands of every body, as they neither convey historical nor military information; and it would be equally useless to endeavour to examine and determine the dispute which happened in consequence of them, as the

Prussians

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Prussians never denied the number of battalions, squadrons, and officers, but the sum total of the rank and file. I believe the intent of this was rather to keep up the spirits of the private soldiers, than to save the honour of General Fink's corps and the Prussian arms: for the latter could certainly be no way so well effected, as by an exact relation of every circumstance, and an accurate description of the ground.

It is impossible to judge of the conduct of troops from the event of a battle, without having first minutely examined their position, and the nature of the ground, in order from thence to discover, whether they were properly employed according to their species and arms, and consequently whether they were in a situation to act with distinguishing bravery or not. Every person who was present at this action must allow, that the Austrians displayed much courage, in an attack which

was conducted with the greatest ability and prudence, and in which every service was drawn from the artillery that it was capable of, and every possible advantage made of the ground. The Prussians also behaved with resolution; but their situation was so disadvantageous, that the different species of troops, however brave, could not properly exert themselves.

Although I have endeavoured to give a very particular and detailed description of the Affair of Maxen, still I do not think it will be either superfluous or unpleasant to my readers, to put them in possession of the accounts that were published at the time, which they may compare with mine. I shall therefore add the Austrian relation, that of the army of the Empire, and the Prussian, without altering one word in either of them.

AUSTRIAN

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AUSTRIAN RELATION

OF THE

AFFAIR OF *MAXEN*.

ON the 17th of November, Field Marshal Count Daun, with the Austrian army, retreated from the camp near Wilfdruf, and occupied that of Plauen near Dresden, with a view of cantoning in that neighbourhood. The King of Prussia detached at the same time a considerable body of troops from Dippoldiswalda to Maxen. The Field Marshal at first opposed to these a corps under the command of Major General Brentano; but as the enemy strengthened theirs at Maxen, and advanced troops towards Dippoldiswalda, he found himself obliged to detach another corps, under the command
of

of Baron Sincere, General of infantry, to Ruppchen, in order to secure the rear of the army. The above-mentioned disposition of the Prussians totally prevented any part of the Austrian army from going into cantonments, contracted and rendered their foraging very difficult, and afforded the former an opportunity of making incursions into Bohemia whenever they chose.—In consideration of these circumstances, the Field Marshal reinforced General Sincere with three regiments of infantry, viz. Durlach, Haller, and Tillier, and two of cavalry, viz. Stampach, and Anhalt Zerbst. His intention was, first to dislodge the enemy's troops from Dippoldiswalda, and then to attack General Fink at Maxen. To this end, General Sincere's corps was ordered to march from Ruppchen the 19th of November, at seven o'clock in the morning, and advance to Dippoldiswalda, under the direction of Count O'Donel, General of the cavalry. Just as they reached

E

Hefelich,

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Hefelich, they discovered the Prussians on their march from Dippoldiswalda towards Maxen. Field Marshal Daun arrived almost immediately from the main army, and found that it was impossible to come up with the enemy on their march, on account of the narrow roads and defiles which separated him from them; he therefore contented himself with firing a few shot at them out of the cannon that could be brought up the most expeditiously. As it was almost night before the whole of the infantry, cavalry, and artillery had arrived, he encamped the corps in a position, which, upon reconnoitring, he found to be advantageous, with the right on the height of Maltern, and the left towards Hefelich; and posted three battalions in the town of Dippoldiswalda. Having done this, he returned to the camp at Plauen, being apprehensive that the King might have gained intelligence of his movements, either by the shot that were fired, or by some other means,

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and that he would in consequence undertake some attack upon the main army. Before his departure, however, he directed, that on the 20th, at seven o'clock in the morning, the troops should begin their march towards Maxen, in order that on his return he might find the columns in motion.

On the 20th, as nothing particular had happened in the army, the Field Marshal returned, and arrived just as the heads of the columns reached Reinhardtsgrimma, when General O'Donel placed himself at the head of the cavalry, and General Sincere at the head of the infantry. The march was performed in four columns, viz. two of the cavalry, and two of the infantry, with an advanced guard consisting of the regiment of Scetzeni, a few croats, and the brigade of grenadiers commanded by Major General Baron Sifckowitz. The first column of cavalry consisted of the regiments, Young Mo-

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dena, Serbelloni, Pretlach, and Schmertz-
 zing, under the immediate direction of
 Lieutenant General Count Schallenberg,
 and Major Generals, Count O'Donel, Reh-
 bach, and Count Gourcy : the second, of
 the regiments, Stampach, Anhalt Zerbst,
 and Old Modena, under the immediate
 direction of Lieutenant General Count
 Stampa, and Major Generals, Vitzthum,
 Count Bettoni, and Count Steinvile. The
 first column of infantry consisted of the
 regiments, Tillier, Anger, Marschall, Giu-
 lay, Clerici, and Ligne, under the imme-
 diate orders of Lieutenant Generals, Mar-
 quis d'Ainse and Blonquet, and the Ma-
 jor Generals, Count Gaisrugg, and Philip
 Count Browne : the second, of the regi-
 ments, Wied, Harfch, Haller, and Durlach,
 under the orders of Lieutenant General
 Baron Dombasse, and Major Generals Hart-
 wegg and Brincken.

Major General Baron Seckendorf re-
 mained on the height of Maltern, where
 the

the right wing of the camp had stood, with the regiments Botta and Young Coloredo, a squadron of Stampach, and one of Anhalt Zerbst, and one hundred hussars and dragoons from the Emperor's, Esterhazy's, and the staff dragoon regiments, in order to defend the pass of Dippoldiswalda. General Brentano was directed to approach the enemy with his corps, on the side of Lockwitz, in such a manner, that he could co-operate with the Field Marshal in his attack.

It was concerted that the army of the Empire should make a detachment to the heights near Dohna, and from thence cannonade the enemy; and that Lieutenant General Count Palfy, with the hussar regiments Haddick and Spleni, and the Slavonian hussars, as also Major Generals Reid and Kleefeld, with their croats, should block up the Prussians on that side.

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Field Marshal Daun, on his arrival at Reinhardtsgrimma, found that the enemy had occupied it with a free battalion and some hussars. He immediately reconnoitred the village, and, on observing that the troops posted in it did not appear very steady, he without hesitation ordered the hussar regiment of Scetzeni, the croats, and a grenadier battalion, to advance against it. On the approach of these, the enemy retreated from their post into the wood, and afforded the Field Marshal an opportunity of reconnoitring the road through the village, which he immediately caused to be done.—In the meantime the Prussians, who had perhaps discovered our design, retreated again from the wood to the first height on the other side of it, which facilitated the reconnoitring the roads that led through the former. It was found that the passes were narrow, and rendered very slippery by the hard frost, and that the heights were steep: consequently it was apprehended, that

that the cavalry and artillery would not be able to proceed, particularly as the horses were not rough shod: but the Field Marshal took all possible pains to obviate these difficulties, or at least to surmount them, which, however, required some time. In the interim, the wood was taken possession of by the croats and hussars; (the latter drove the enemy from the height that lay near the mouth of the defilé) and as, upon a closer examination, the roads were deemed passable, the further arrangements for the march and attack were made. The columns passed the village of Reinhardtsgrimma, and the grenadiers occupied the wood as expeditiously as possible; and as soon as one grenadier battalion had ascended the first height on the right of the debouché, the Field Marshal repaired thither, in order to take a view of the enemy's position. He found that it might be taken in flank, and also cannonaded with great effect from a height that was situated in

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the front of its left. The heavy artillery was immediately brought up, and began to fire. The columns passed the defilé at the village and the wood with the greatest expedition, and then remained under cover of the hills till the attack. The cannonade was very heavy on both sides, and the Austrian fire, which was very quick, and ably directed, did so much execution in the Prussian line as to create in it some disorder. The Field Marshal perceived this, and ordered the attack. It was executed by the infantry in columns of a battalion in front, and by the cavalry in columns of a squadron in front.

The assailants displayed such determined bravery, that the enemy's troops were soon driven from their principal height, which was steep and difficult of access, and from the works* that they had thrown up upon

* That this assertion, viz. of the Prussians having thrown up works on the heights of Maxen for their defence, is erroneous, is sufficiently proved by what Captain Tielke has said in a former note.—*Translators.*

it, with the loss of many cannon. The victory was no longer doubtful. The cavalry and infantry seemed to vie with each other in intrepidity; but, notwithstanding so vigorous an attack, which must of course inflame and render them eager, they shewed the greatest obedience and discipline when ordered by the Field Marshal to form on the heights in two lines, which they performed with much exactness. The grenadiers immediately advanced against the village of Maxen with great vivacity, and drove the enemy's troops out of it. The regiments were scarce formed again, when they perceived that the Prussians were ranged on the rising ground on the other side of Maxen, where they had planted their artillery and waited the second attack. However, the exemplary courage of our troops did not allow them to remain long in this new position; they forced them from height to height quite back to the village of Bloschwitz; during which, the cavalry ascended

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ascended and descended all the eminences with extraordinary agility, and often broke in upon the enemy. Had not the night intervened, General Fink's whole corps would certainly have been driven into the Elbe.

At the close of the evening, the Field Marshal formed his troops on the heights that he had gained, and remained the whole night under arms. General Brentano, who on his side had been very active against the enemy, joined his right to the left of the Field Marshal's hussars: the advanced posts were composed of the latter, and received the strictest injunctions to be most attentive to every, even the smallest movement of the Prussians, who were not above a cannon-shot distant.

The Field Marshal made every preparation to renew the attack at break of day, and to that end had the troops supplied
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with fresh ammunition of all sorts from the camp of Plauen.

This same night General Seckendorf reported, that his hussars and the dragoons belonging to the staff-dragoon regiment, which had been posted in front of Dippoldiswalda, were driven in, and that they had discovered Prussian cavalry and infantry on the other side of that town: he was immediately ordered to defend that pass to the last, but should he be absolutely forced from it, to retreat towards Reinhardtsgrimma and Maxen. The Field Marshal posted on the heights of the last-mentioned place six battalions, and two regiments of cavalry, under the command of Lieutenant General Blonquet; and sent orders to Baron Buccow, General of cavalry, to detach immediately Lieutenant General Baron Angern from the camp of Plauen, with four battalions to Ruppchen; and, should there be nothing to apprehend in the main army, to strengthen this post

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post in proportion to the increase of the enemy's force in the neighbourhood of Dippoldiswalda; thus to secure every pass. Also, in order more effectually to attain this end, Lieutenant Generals Angern and Blonquet were directed to concert in conjunction the further necessary measures, and to co-operate in their execution.

Having settled the above dispositions, the Field Marshal retired to rest for a few hours in Maxen, but was on the right wing of his corps again an hour before day-break, when he ordered the cannon to be brought as far forward as possible, and the grenadiers to advance and hold themselves in readiness to renew the attack.

A little before day-light it was reported from one of the advanced piquets, that a Prussian General officer had arrived there with a trumpeter, and wished to speak to the
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the Commanding General of the Austrians. The Field Marshal immediately sent to him Lieutenant General Count Laschy, with directions to say positively, that either the enemy's whole corps must surrender themselves prisoners of war, or, in case of a refusal to this, that they should be driven into the Elbe.

The Lieutenant General was scarce dispatched, when the grenadiers began again to cannonade the Prussians, and they were on the point of advancing to the attack, before the Field Marshal could circulate the orders for a suspension of hostilities: however, he immediately directed them to desist. Count Laschy soon returned with the news, that the enemy had entirely surrendered themselves prisoners of war, but requested to keep possession of their baggage; which was granted them, as a particular favour,

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The whole Prussian corps under General Fink now laid down their arms, and delivered up all their remaining colours, standards, kettle-drums, trumpets, &c. The prisoners were received by a detachment of cavalry and infantry ordered for that purpose, and were conducted to the Great Garden at Dresden, there to remain under proper guards till they should be removed further. The Field Marshal returned to the main army, and left one corps, of which the command devolved on Count O'Donel, General of cavalry, posted on the heights of Maxen, and the other, under General Brentano, at Dippoldiswalda.

In this action all our General and Staff-officers, and in short all our troops, both cavalry and infantry, gave repeated proofs of their usual heroick valour.

WHAT

WHAT share the army of the Empire had in this affair, will be seen in the following account, extracted from their journal.

ACCOUNT of an Attack made the 20th and 21st of November 1759, by a Detachment from the Army of the Empire, on the Enemy's Posts in the Neighbourhood of Dohna.

ON the 17th of November, the army of the Empire performed a very difficult march from Friederichstadt to Giesshubel, almost constantly in sight of the enemy, and by their excellent dispositions repelled every attack that was made on their baggage, and rear-guard, without sustaining on their side any loss. By this march they were beforehand with the enemy in occupying the very advantageous position near Giesshubel; the maintaining

64 AFFAIR OF MAXEN.

taining which not only enabled them to keep open a free communication with Bohemia, and protect that country from any further incursions on this side, but also rendered the situation of the Prussian corps, which had taken post at Maxen and Dohna, very critical and dangerous.

On the 20th instant, at the requisition of his Excellency Field Marshal Count Daun, Lieutenant General Count Palfy was ordered to advance from Zehista towards Dohna, with the two hussar regiments Spleni and Haddick, as was likewise Major General Kleefeld from Zoschendorf, with the croats that were under his command, the Slavonian hussars, and those of Bannat. They were followed by a detachment from the army encamped at Giesshubel, which was conducted by Lieutenant General Prince Stolberg, with the Major Generals, Counts Effern and Fugger, and consisted of the infantry regiment of the Elector of Mayence, a battalion of

SECTION I. 65

Darmstadt, and two of Furstenberg, with some heavy artillery, and the Austrian dragoon regiment of Savoy, commanded by Major General Marquis de Voghera. At the same time Major General Baron Reid, with his croats and hussars, moved from Liebstadt towards Maxen, on the flank of the Austrian corps.

The action began about noon. On our side, all the croats under the command of Major General Kleefeld attacked the enemy with the greatest spirit, and Prince Stolberg supported this attack so effectually by the manœuvres that he made with the German troops, and by the fire from the batteries, which he had disposed with great judgment, that the enemy were soon dislodged both from their strong works on the hill called the Goldberg, and from the town of Dohna, and were pursued quite into the camp at Falckenhain. This afforded Count Palfy an opportunity of advancing with the hussars

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through

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through Gahmig, on to the plain near Rohrsdorf. He did so, and immediately made General Uyhazy, with the regiment of Spleni, attack the flank of the Prussian corps, that was already retreating from Maxen, by which they took many prisoners, two pairs of colours, and two standards. This movement of Count Palfy's was one of the principal reasons that prevented the enemy from retreating towards Kleinport, which seemed to be their intention; and consequently reduced them to the necessity of allowing themselves to be surrounded between Maxen and Falckenhain; for, whilst all this had been executing on the side of Dohna, Baron Reid had forced the Prussian posts from the avenues that lead from Maxen to Liebstadt, and had assisted in pursuing the retreating enemy from this side also towards Falckenhain, in which pursuit he took several prisoners.

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The detachments of the army of the Empire made in all four hundred and twenty-six prisoners, amongst whom were five staff and commissioned officers.

It appeared very probable that the Prussians, who, about the close of the evening, were collected in an irregular manner between Maxen and Falckenhain, would attempt at break of day to force through on our side. Prince Stolberg's corps was therefore in the night reinforced from the army of the Empire, with three battalions of the Elector of Palatine, viz. one of the guards, and two of the regiment of Efferen, as also with some heavy artillery; and every preparation was made to receive the enemy.

Lieutenant General Count Palfy was on the point of renewing the attack; Major General Kleefeld had already advanced with his croats into the village of Falcken-

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hain; and Prince Stolberg had begun to cannonade the enemy from the side of Dohna, when they received directions from Field Marshal Daun to suspend hostilities, for that the whole Prussian corps was going to lay down their arms, and surrender themselves prisoners of war.

It must be confessed, that both the Austrian troops and those of the Empire, displayed repeated and extraordinary proofs of signal bravery throughout the whole of this undertaking, which was blessed with so happy an issue, and which reflected so much honour on the firm supporters of a just cause.

The following officers merit particular praise, viz. Lieutenant General Prince Stolberg, Count Palfy; Major Generals, Reid, Kleefeld, and Uyhazy; Colonel Oettves; Lieutenant Colonels, Paul Nostrovizki and Czedo, both belonging to the hussar regiment of Haddick; Majors, Namenbach

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Namensbach of the Oguliner, Anreuter of the Licaner, and Icoffich of the Peterwaradein regiments; Captain Stamberg of the croats; Major Faulhabar of the artillery belonging to the circle of Suabia; and Captain Bauer of the artillery.

These officers contributed greatly to the happy success of this enterprise, and consequently they should receive the applause they so richly deserve*.

The Prussians published the following Account.

WE have lately experienced a fresh proof of the particular instability of fortune in the operations of war.

* By comparing the account given by the army of the Empire with Captain Tielke's, or any other impartial account of this affair, it appears that they greatly exaggerated the services they performed.—*Translators.*

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It is well known that Lieutenant General Fink was detached with a corps, about the middle of November, by Dimpoldiswalda to Maxen, there to post himself, in order to cut off the enemy's communication with Bohemia, and intercept their convoys. The more dangerous this position was for the Austrians, the more determined were they, of course, to clear their rear at all events. To this end they attacked General Fink at Maxen, on the 20th of November, with a very superior force, and on three different sides at the same time. They succeeded in their attack, and made themselves masters of the heights of Maxen, from whence they could cannonade the Prussian corps, which had retreated to the lower ground, from three several batteries with great advantage. Notwithstanding these unfavourable circumstances, General Fink defended himself the whole day, and endeavoured to retreat in the night towards Dohna, unluckily the only retreat left him, as he
was

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was totally cut off from Freyberg. At day-break, however, on the 21st instant, he found himself completely furrounded, and without ammunition, which obliged him to surrender the whole of his troops prisoners of war.

It is impossible to deny that the loss was considerable and sensibly felt; but it is also certain, that General Fink's corps was not very strong, for the battalions and squadrons were hardly half complete; moreover, a great number of the soldiers escaped to the main army, and we still have more of the enemies prisoners in our possession, than they have of ours.

We have every reason to hope that his Majesty will soon rise superior to this, as he has often done to much severer strokes of ill-luck; and that he will find such resources in his own genius, as will enable him to support his just cause, and bid defiance even to the frowns of fortune.

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This accident has by no means prevented him from profiting still further of the advantages he had already gained, and confining the enemy's very superior force to the narrow space between Dresden and Dippoldiswalda.

On the 28th of November, his Majesty had still his head quarters at Wiltsdorf; General Ziethen was with the advanced guard at Kesselsdorf; and General Hülse with a separate corps at Freyberg.

On the 23d of November, the Austrian army moved towards Kesselsdorf, (supposing, no doubt, that the camp was removed) and cannonaded the village without effect. His Majesty advanced with his army against the enemy in order of battle, upon which they retired in such haste, that General Ziethen, who pursued them with the cavalry, could only make a few prisoners.

Before

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Before General Fink's misfortune, Colonel Kleift of the huffars had been detached into Bohemia, where he destroyed a magazine at Auffig, and brought back many prisoners.

SECTION

SECTION II.

OF THE PROFILES OF A POSITION;

A L S O,

A METHOD of ascertaining and drawing
them.

*Le chef s'avance seul, il doit tout reconnaître,
Il peut vaincre en un jour par un coup d'œil de maître;
S'il fait des lieux, des tems un choix prémédité.*

L'Art de la Guerre de main de Maître.

ALL those who are instructed in the science of fortification know, that it is impossible to form a judgment of a fortress, or system of fortification, without examining the profiles of the works. The same is the case with a position, whether seen in nature or on a plan: it is therefore

fore incomprehensible why this part of the military science should have been hitherto so much neglected.—Amongst all the authors who have written on field fortification, I do not know one who has treated of the method of judging of the profiles of any given situation, or laid down rules for the attainment of this piece of military knowledge, which is so extremely useful, and so very essential a requisite towards forming a just military coup d'œil, of which many talk without, in fact, knowing what it means.

It would be ridiculous to conclude from hence, that this part of the science has been hitherto entirely latent ; all great Generals and clever field engineers have possessed it, otherwise they never would have been what they were : and those of them who have written upon the art of war, have supposed their readers already possessed of this knowledge, as an engineer, who writes a work on fortification, supposes

supposes them already grounded in mathematicks. It belongs, in fact, to, and ought to find a place in, the first rudiments of tacticks and field-engineering; and the authors who have written on these subjects are greatly blamable for having passed it over in silence, or at least for having touched upon it very slightly. It is possible that some, who really understood it, but who wrote merely for infantry or cavalry officers of inferior ranks, considered it as too extensive for the plan of their works; and many authors have probably been themselves entirely ignorant of it.

The profile of a situation is the section which represents the particular declivity of each hill; shews whether they are steep or not; whether easy or difficult of ascent for infantry, cavalry, artillery, &c.; or whether they are impracticable for either; as also their connection with each

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each other, their respective height, and particular command.

A profile of this kind may be taken in three different manners, viz.

1. With instruments.
2. Without instruments (by pacing, as will be described.)
3. A coup d'œil.

1. The taking the profile of a situation with instruments is called *levelling*, and the instrument which is generally made use of for that purpose is called a *level*.—This science, namely *levelling*, is very extensively treated in many books written on the elements of mathematicks, as also in many separate French and German works. It cannot be entirely dispensed with in field-engineering*, and in the

* In field-engineering it is principally of use in making inundations.—*Translators.*

construction of buildings and works in the water it is absolutely necessary; but it would be too tedious a method of taking the profiles of a position, and cannot be of general use on account of the difficulty of procuring and carrying about the instruments. I never yet saw a profile that was taken without instruments, and in which nothing but the eye and step were employed; however, I am not vain enough to imagine, that nobody ever thought of this method before myself.—It is executed as follows:

If you are not already provided with a good plan of the situation, you must take one as accurately as possible (according to one of the methods proposed in my *Field-engineer* *) endeavouring to ascertain the true base of the hills, which is

* This is a very useful work, written by Captain Tielke; we do not think it necessary or proper to insert any passages of it, as we understand it is translating into English by an officer of the guards.—*Translators.*

easily

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easily done by drawing the exact course of the vallies that surround them; you must then fix on some point or object, as a tree, house, &c. which is situated at the end of the line of profile, and can be seen from the beginning of it, as H*, Prof. 2. F, Prof. 3. Pl. 4, or if there should not be any remarkable object already there, you must drive in a pole. Having done this, you set off from the first point, that is, the point where you begin the profile, here, C, Prof. 3. Pl. 4, and walk in as straight a line as possible towards the chosen point of view †, which is here the tree,

* This tree was planted *after* the affair of Maxen, in memory of the Prussian battery which had been placed on that spot, wherefore I have not marked it on the plan.—*Author.*

† It is here mentioned, that you are to go in a straight line from the beginning to the end of the profile, which is certainly proper, and the only method that can render a profile useful, because it then shews what effect the fire of artillery or musketry will have in the direction of the given profile, and whether the enemy in advancing on that line is covered at all from the fire, &c. This is their true use and meaning.—Therefore, all profiles of situations should be straight lines; and wherever the line makes an angle, as, H.
E. I.

tree, F. or, if owing to the ground's continually falling, you lose sight of the point of view, you must endeavour to remain constantly on the straight line between those two points*;—you count your paces with attention, and at every alteration of the declivity of the hill (that is, where it grows more or less steep) write down the number of paces you have taken from the first point, and draw exactly the last

E. I. one should consider that angle as the beginning of a fresh and separate profile, and represent it as such: therefore H. E. E. I. should be distinct. These separate profiles will shew the respective heights of the hills, as well as if they were represented as one continued line, and will be less apt to create confusion. If, however, you want to shew the effect of the fire from the hill H, against an enemy advancing straight from I, you must of course draw a *straight* line from H to I, and make the profile of it.—*Translators.*

* It is extremely difficult to preserve the straight line when you have no point to guide you; and therefore it would be proper, after having fixed on the principal point of view, to choose likewise three or four intermediate points, situated on the straight line between the two principal points, in order that if you lose sight of the principal point of view, you may have one or two intermediate points to guide you; indeed it is almost impossible to keep the straight line at all without intermediate points.—*Translators.*

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measured

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measured oblique or crooked line (that is, the line which expresses the surface of the hill from the preceding angle to this) judging with your eye as exactly as you can the angle which this line makes with the base of the hill, or (which is the same thing) with the horizon *. This indeed requires a very just coup d'œil, which, however, may be attained by constant practice, and as it is so indispensably necessary in the execution of every part of the art of war, it is well worth the while of all officers to take pains in acquiring it.— If the hill should be so steep as to make it impossible for you to pace it with accuracy, you may measure it with a cord or rod, which you must previously have divided into paces; and indeed, if you are not much accustomed to pacing accu-

* It appears to us that this, viz. the angle, cannot be judged when you are on the hill itself; and that the only way of doing it is, to place yourself at some distance, where you have a side view of the hill, and draw the profile à coup d'œil.—*Translators.*

rately, you may perform the whole measurement with this cord or rod.—Should your profile or section go through rocks which are so steep as not to admit of any measurement, as here, for instance, in Prof. 4, from x to y, you must take the breadth of their base with the compass out of the plan, “and draw the hypothesis, or line of profile, à coup d’œil.”—In ascending or descending a hill, you must endeavour to make the steps neither longer nor shorter than usual, that is, exactly the same length as in the plain.—If you have time, and wish to give your profile all the accuracy that this method is susceptible of, you may pace each line twice, viz. once up and once down hill, and, if you find that the numbers of paces do not agree (for it will probably happen that in pacing down hill you will have a smaller number than in pacing up hill) divide the difference; that is, add half the difference to the smaller number, and consider the sum as the true number;

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for instance, if one is 150, the other 140, take 145 for the true number.

When you have finished this brouillon of your profile, you must, in order to make the fair copy of it, draw a line on the plan from the one principal point to the other; for instance, Pl. 3, the line B. N; and if, as is generally the case, the whole of your section or profile is not one continued straight line, the plan will of itself determine the size of the angles that the different directions of the profile make with each other: for instance, if the line B. N. made an angle with the line N. A. you would draw it on the plan accordingly *.—You then draw the line on another sheet of paper, and if the scale of your plan is too small to express every thing properly in the profile, you may adopt a larger scale for the latter, for in-

* The line A. B. is in fact one continued straight line; however, the profile C, D, E, F, K, shews more clearly what the author means.—*Translators.*

stance,

stance, twice as large; in which case, you must of course draw the line A. B. twice as long as it is in the plan, Pl. 4. Prof. 1. A. B. You mark on this line with points the different objects which it intersects in the plan, and which are to be expressed on the profile according to their respective distances, and the scale adopted for the profile, and from each of these points you erect a perpendicular*. You then begin either at the lowest point of the profile, Prof. 1. A, or at the highest

* These horizontal distances are to be considered as the bases of the rectangular triangles, by means of which the author constructs the profile. This, however, will be subject to great inaccuracy, if your plan has been taken, as most military plans are, by the step, and without the assistance of a great many fixed points; for, how do you find the distance of these objects from each other in taking the plan? By pacing from one to the other. And what side of the triangle does that give you? The *hypotenuse*, not the *base*.—In taking the plan, indeed, you either make your steps something longer than usual, or you deduct something from their number; however, though you may by that means acquire a sufficient degree of accuracy for your plan, yet it will not be so accurate as to enable you to make use of this line as a datum in a triangle.—*Translators.*

point C * (which latter in general is the best), and through this highest point you draw a line parallel with the base, mark on the above-mentioned perpendiculars (here for instance H. and N.) the several heights of all the other hills or points of the same hill which the profile intersects †, which will shew how much they are lower than the point C, and then you draw the profile line after line. Each separate line or distance can be considered as a rectangular triangle, of which one

* If you begin your fair copy of the profile from the highest point, you must draw the upper line first, and let fall the perpendiculars from it; if, on the contrary, you begin from the lowest point, you must draw the lower line or base of the hill first, and raise perpendiculars upon it: because, if you draw the upper line first, and begin the profile from the lowest point, it is not possible to determine the length of the perpendicular A. A.—On the other hand, if you draw the lower line first, and begin from the highest point, it is impossible to determine the length of the perpendicular C. C.—There is some little obscurity in part of the paragraph of the text which this note refers to; however it is literally translated.—*Translators.*

† The author, we suppose, means to determine this by intersecting the perpendicular with the hypotenuse; at least we know no other way for him to do it.—*Translators.*

angle

angle (viz. that of 90°) and two sides, viz. the base which the plan gives you, and the hypotenuse which you have just measured, are known. If the paces you made use of in measuring the surface of the hill, that is, the hypotenuses of these rectangular triangles, were perfectly of the proper length, that is, if they bore exactly the just proportion to the scale according to which your plan, and of course the bases of the hills, and of these triangles are drawn, the angle which the hypotenuse makes with the base or horizon, and of course the angle it makes with the perpendicular, would be exactly determined by intersecting the perpendicular with the hypotenuse, without any further aid: but as it is difficult, if not impossible, to regulate so justly your paces in ascending and descending a hill, you must, in determining these angles in the fair copy of the profile, observe and make use of the direction given à coup d'œil, as

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before-mentioned, to the hypotenuse during the act of measuring the line drawn over the surface of the hill.

The greatest difficulty in this whole operation is to ascertain on the plan the true base; for, when in taking the plan you pace out the hills, you only get the hypotenuse of the above-mentioned triangles, which, when you put it to paper, you must convert into the base, by deducting a certain number of paces in proportion to the height of the hill, as I have mentioned in my Field Engineer. However, you will find this with still greater accuracy, if you first take an exact plan of the ravines or hollows which surround the hills, with their several angles and windings, and then draw upon this area (thus found) the several lines which you have measured across the hill, as roads, &c. considering them as diagonals of the figure; by which means the
circumference

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circumference and diagonals correct each other *.

It

* That is, the circumference will serve to correct the diagonal and its several parts. We say its several parts; for instance, if you adopt this method, having drawn the circumference of the figure, you begin one of your diagonals, on which we suppose there are several points whose particular situation, that is, their distance from the beginning of the diagonal and from each other, must be determined. We will suppose, for instance, the area or figure to be, a b c d e f g. Fig. 1. Pl. 5, and one of your diagonals, a 1 2 3 4 e; it is clear, that in this diagonal it is necessary to find the true situation of the points 1 2 3 4.—Supposing now that in pacing out the line a e, you find it to be 600 paces, but having taken the circumference, a b c d e f g, of the hill, and drawn the figure exactly, you find the diagonal a e, to be in fact only 520 paces; you have then taken 80 paces too much in the whole line a e; but in order to know nearly how much you have exceeded the true measure in each particular division of the line, you must proceed as follows:—Suppose from a to 1 you have taken 90 paces, then you say, as 600 is to 520, so is 90 to the true length of this part of the base of the hill:

$$\begin{array}{r}
 600 : 520 :: 90 : x. \\
 \hline
 90 \\
 \hline
 600 \overline{) 46800} \\
 \hline
 78 = x = a 1.
 \end{array}$$

And by the same method you can find all the other divisions of the line. This, however, supposes that you have made use

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It is clear, that a profile taken in this manner cannot be so just and accurate as one levelled with proper levelling instruments; but a mathematical exactness is not

use of an equal uniform step in pacing the whole line $a e$; but if in the first half, which is an ascent, you had taken shorter steps than in the last half, which is a descent, you must then deduct something from the second member of each proportion of this first half, and add something to the second member of each proportion of the last half. The inequality of the declivity of the hill will still prevent this being quite exact, because the steeper any one part of it is, the greater will be the difference between the hypotenuse and the base, and of course the more should be deducted from the former.—However, there is still one way left of correcting, in some degree, these inaccuracies, and of approaching nearer to the truth: for instance, if the several parts of the hill (or divisions of the diagonal) differ very much in point of steepness, you may, exclusive of the additions and deductions above-mentioned, deduct something from the second member of the proportion of the steep parts, and add something to the second member of the proportion of the less steep parts.—If, however, this diagonal is not a straight line, but makes several angles, as, $a o p q r s e$, Fig. 2. Pl. 5, you must draw a straight line, $a e$, from one end of it to the other, see what proportion it bears to the straight line or diagonal $a e$, Fig. 1. drawn through the figure of the circumference of the hill, and then you may say—As $a e$, Fig. 2, is to $a e$, Fig. 1, so is $a o$, Fig. 2, to $a o$, Fig. 1, which will be found by that means; and in the same manner can you find all the other parts.—By what we have here said, we do not mean particularly

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not in this case necessary, for the object of a profile of this kind is only to shew nearly the different degrees of steepness, and the respective heights of the hills.

In order to ascertain with still greater accuracy the respective heights of the hills, and the proportion they bear to each other in profile, you must, after having taken the profile, go on to each particular hill, examine which other hills it commands, and which it is commanded by, and make a memorandum of this, which will be of use to you in making the fair copy of your profiles. It is, however, extremely difficult, and requires a very assiduous and constant practice to bring your eye to such a degree of perfection

particularly to recommend the method of proceeding proposed by the author in the paragraph of the text which this note refers to. We have explained in this note the way in which the circumference of the figure can serve to correct the diagonal, and, as that is very tedious, it appears to us, that this mode of proceeding (proposed by the author) is not the best that can be adopted.—*Translators.*

in

in judging of ground, as to be able to determine this; for the hill on which you stand always appears to the eye to be higher than another which is at a considerable distance.—The easiest and surest way of judging of the respective (or proportionate) height of two hills is, to place yourself on a third equally distant from each of them.—You can assist your eye by holding a straight stick exactly horizontal before you, so that one end of it is in a straight line between your eye and the summit of one of the hills, by which means you may easily judge nearly how much the other hill is higher or lower than it.—If, however, you have not an opportunity of ascertaining the proportionate height of two hills from a third, you must go on to each of them, and from each judge how much higher or lower it is than the other; if you are not yet sufficiently accustomed to this, you will do well to lay down on your belly, and place your head in such a position, that your forehead

forehead and chin make a perpendicular line with the horizon. If, in this situation, you look straight forwards, your visual ray can be considered as a horizontal line: if this ray, therefore, terminates in the hill opposite you, that is, below its summit, that piece of the hill which is above the termination of your visual ray, shews by how much the other hill commands that on which you are: if your visual ray passes over the hill opposite you, it is as much lower than the hill you are upon, as there is space between its summit and the said ray *.

The finding thus the difference of height of the several hills is of service in drawing the fair copy of the profile, tho' not absolutely necessary; for, having drawn the profile of one of the hills, and

* We doubt whether it would be possible to determine the difference of height of two hills in this manner; however, every body can put it to the proof, by first trying to ascertain the difference thus, and then measuring it with an instrument.—*Translators.*

knowing

knowing the difference of height between it and that which follows it in the profile, enables you to determine the summit of the latter by a dotted line drawn parallel to the base, as much higher or lower than the first as the next hill is; and this given height, and the measure of each line of the profile (found as above-mentioned by pacing) united, render it more easy for you to determine the rest of the profile with accuracy than it otherwise would be, as these two data serve in some degree to correct each other.

All that I have hitherto said will be very clear and evident to those who will give themselves the trouble to consider with attention the profiles, Plan 4.

Profiles taken in this manner give a much more exact and lively idea of the ground than can be conveyed by a mere plan, however accurately taken and well drawn it may be; not to mention that
the

SECTION II. 95

the latter generally loses a great deal of its accuracy in being copied, which is not to be feared with a profile, especially if it is on a pretty large scale.—They are of singular use to an officer who is charged with the attack or defence of a position; they may enable him, in the former case, to execute his attack with the least possible loss; and in the latter, they may prevent his suffering the disgrace of being defeated, without making so good a defence as his position was capable of.—In order to demonstrate this, I will make some reflections upon the profiles, Plan 4.

PROFILE I*.

IF the enemy advances from A towards C, my artillery, if placed in C, will not be

* We think it necessary to guard our readers against mistaking the meaning of the author's reasoning on the profiles, Pl. 4. It appears from all that he says on the subject, that he only means to shew the general nature of profiles, the influence

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be in a situation to incommode him at all, much less to prevent his advancing; the balls will not even sweep the hillock N, but will all go too high, as the upper shot line shews. If I bring my artillery 150 paces further forward, it will indeed bear upon the hillock N; however, it will not sweep a space of above 50 paces, which the enemy will soon pass. From A to b, the hillock N covers him completely from my fire, and from N to a, he

fluence they have upon the effect of fire, and upon the manner of placing the troops and batteries; and that he does not here reason upon the plan of Maxen, nor mean to say, that all of his remarks upon these profiles are immediately applicable to the defences of the lines drawn upon that plan: for, in the first place, he considers the profiles in his reasoning as if they were *straight lines*, which is not the case, as Pl. 3. shews; wherefore it is evident, that what is just, considering the given profiles abstractedly and as straight lines, would not hold good on the ground laid down in the above mentioned plan: secondly, if you consider the position, it appears, that nobody could think of making use of batteries, or any considerable number of troops, to defend the hill from C to A; because no enemy would or could attack the position in that part: therefore, the author evidently means *much* of what he says in this section, merely as general reasoning on profiles, and not as remarks to guide a person in occupying the position of Maxen.—*Translators.*

is quite under my cannon (that is, I cannot depress the guns enough to touch him); I must, therefore, bring my guns further forward to a, from whence they can sweep the whole face of the hill from C to b.—If I wish to defend the hill still lower down with artillery, I may place one or two light field pieces, or, which is still better, a howitz in b, which sweeps the hill as far as c; lower down the artillery can be of no service, on account of the too great steepness; but the infantry posted at d will make it impossible for the enemy to advance from A to d, especially as it has nothing to fear from his cavalry.—The cannon placed in b. Pl. 4. and N. Pl. 3, are not in the way of the fire of the main battery placed in a. Pl. 4, and C. Pl. 3; for this battery cannot at any rate fire upon the enemy till he is in b, and these cannon must by that time have retreated in the little ravine to the right or left; or, they may even be reposted on the stony

H

hillock

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hillock to the right, Pl. 3.—The declivity (or face) of the hill from H to B can only be defended by infantry, which, however, can dispute every foot of it.—The artillery can only be made use of as long as the enemy is on the flat hill opposite, and during his descent from the top of that hill to the road which comes from the last house in the ravine between Maxen and Muhlbach, and runs between the hills L and E to Hauffdorf. The battery must be placed in H.—Cavalry, as the profile shews, is perfectly useless, whether the enemy comes from A or B.

P R O F I L E . 2.

IF I suppose the enemy advancing from K, I find, that if I place my artillery in H, it will have little or no effect; for, 1st, It cannot fire upon, nor incommode the enemy whilst he is coming in column out of the wood.—2^{dly}, It cannot touch
him

him whilst he is ascending any one of the heights on this profile, for the ascent from m to k is completely covered by the hill I, as are also the hollows from i to h, and from g to f, by the risings h and f; and when the enemy has advanced to e, he is completely under my cannon. There remain, therefore, only the spaces e f, g h, and i I, on which last declivity all shot coming from H, are plunging shot, and of course little to be feared.—Besides this, the hill I, is something higher than H, and if the enemy is superior in artillery, which the attacking party generally is, he can easily silence the battery in H, before he allows his infantry to advance down the hill.—From H to e, cavalry cannot be made use of for the defence, on account of the steepness of the hill, and from g to I, it is too much exposed to the cannon fire of the enemy's battery in I.—The hill H can, therefore, only be defended by infantry.—But even supposing musketry to carry 300 paces (whereas it

in fact has little effect at above half that distance) it will not reach to the first hillock f; besides which, the great steepness of the hill H prevents your seeing the foot of it*.

All these circumstances combined prove clearly, that you should not post yourself on the hill H but I.—Being posted on this hill, you can make it almost impossible for the enemy to deboucher; for, when his columns come out of the wood, and attempt to form into line, they will suffer extremely from the artillery fire under which this formation must be executed; besides this, the balls (especially as the

* The Prussians perceived this, though too late. Two battalions marched down the hill to meet the Austrians, who were advancing to the attack; this shewed that their commanders were men of intelligence and resolution, and the movement would have been of use, had not the battery L, which scoured the ground completely, together with the excellent dispositions made by Marshal Daun, and the great courage with which the attack was executed, rendered the attempt fruitless.—*Author.*

*

fire

fire of this battery and of that in F cross each other) will knock down the trees, whose splinters will do the enemy almost as much harm as the shot; and these trees, forming as it were a kind of abbatis, will render the passage of the wood still more difficult.—The cavalry can also be here employed with great advantage, Pl. 3. R; and I should be glad to know what troops, under such a heavy cross fire of artillery, could pass a wood, form themselves out of column into line, and during this formation resist the attacks of a resolute cavalry.—I saw a proof of the impossibility of this at the battle of Torgau. The Prussian grenadiers at the first attack came out of the wood in column, just in front of our batteries, with incredible resolution, their arms shouldered, and in as good order as if they had been on a parade. They endeavoured to form under our fire, and, notwithstanding our artillery made a terrible havock among them, they still advanced within 150 paces

of us ; but the grape fire had then so decisive an effect, that it mowed down whole platoons, and forced the few remaining grenadiers to retreat, after above three quarters of these brave troops were killed.

But supposing that neither the artillery nor cavalry could prevent the enemy's formation, he still has to mount the hill I, the whole face of which is swept by artillery. — Moreover, there is nothing to be feared from the enemy's artillery, for there is no height in the wood from which he could cannonade the hill I, and (even supposing he should have got cannon through the wood) the fire of artillery from low ground against a height is of little effect. — The cavalry also can still act on the face of this hill, and the infantry can march and meet the enemy upon it, and dispute every inch of ground with him.

All

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All these remarks are equally applicable to the third profile, and I think it would be superfluous, and even an affront to the understanding of my readers, to enlarge more upon the subject.

A person who, notwithstanding the fatigue and trouble attendant upon taking the profiles of a situation, perseveres in practising it, will acquire so just an eye as to be able to draw the profiles à coup d'œil, which is the

THIRD METHOD.

THIS is the true military coup d'œil, to which most of the good Generals have been indebted for their reputation.— There are some men so happy as to be born, as it were, with this talent; however, with the generality of people, the attaining any degree of perfection in it,

H 4

has

has been the fruit of much pains and practice.—Those who are destined to the military profession should begin in their youth to endeavour to acquire a just coup d'œil, and they can take an opportunity of doing this whenever they ride or walk out. For instance, you fix on some house, tree, hillock, or other object, and guess how far it is distant from you, and then you walk straight to it, count the number of paces you take, or (if you know exactly the number of steps you make in a minute) the number of minutes, and by comparing this number with the number you guessed it to be, the difference shews you how much you have been mistaken*. In the beginning this difference will be very great, but persevere, and you will at length not fail fifty paces in a thousand, and your eye will in time become so just, that, without previously measuring or pacing out

* It is of course understood that you have learnt to pace accurately.—*Translators.*

a position,

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a position, you will be able to say with a great degree of certainty, from such a point to such another are so many thousand paces, or such a number of battalions would have room to form on that space.—When an officer has acquired this readiness in judging of distances, and of the relative command of the different heights, and such a knowledge of the advantages and disadvantages of their different profiles, as to be able to judge at once whether they defend each other or not, and what sort of troops or artillery are proper for their attack or defence, then, and no sooner, is he capable of reconnoitring a country with real advantage, either, if commander of a corps or army, to choose a position in it, or, if in an inferior station, to make a just and well-grounded report to his General.

METHOD

METHOD of taking PROFILES,
proposed by the Translators.

IT cannot be disputed that the accompanying every plan of a position with accurate profiles of all the hills is of great use ; it frequently happens indeed that, for want of time, you must content yourself with taking only a tolerable plan ; but, even in that case, you should endeavour to draw the profile of at least one of the principal hills, because that shews the manner in which the person who drew the plan expresses a hill of any given profile in plan, and serves, as it were, for a scale, which enables any body, who may examine the plan, to judge of the height and steepness of all the other hills. Should you be so much hurried as not to be able to take even this one profile accurately, you may do it à coup d'œil, placing yourself at some distance, in a situation where
you

you have a good side view of the hill, from whence the line of profile will appear strongly marked, and thus situated, you can draw it much better than if you were on the hill itself.—In this case, namely, when you have not time to take profiles of all the hills, you may number them according to their respective heights (which you likewise judge à coup d'œil) the highest, N° 1, the next N° 2, and so on.—Although there can be no doubt as to the utility of profiles, yet many people may perhaps entertain doubts concerning the excellence of the method of taking them, proposed by the author. We do not pretend to decide upon its merits, but, having endeavoured to render this section as intelligible as possible, we will now venture to offer to our readers some few ideas of our own upon the subject.—As we have taken particular pains in the translation of the text to render it literally, and to make the *true meaning* of the author evident, (in which, however,

we

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we own we have found some difficulty, as there is a little obscurity of expression in parts of this section) our readers will be enabled to judge whether our notes upon the text, and the following remarks on this subject, are just or not. In order, also, to put it in their power to make a more close comparison between this method which we propose and the author's, we have chosen the same example to illustrate it, which he has chosen before us.

When you are going to take the profiles of a situation or position, it would be of great use to you if you were to begin by measuring the height of several of the principal hills, as also of the most marked points of each profile, as this will guide you very much in your further operations. The easiest way of doing this would be by trigonometry, but then you must have a table of sines and tangents, as also a quadrant. As you are generally unprovided with these, you may do it in
the

the following manner :— Suppose you wish to take the principal profiles of the ground between Maxen and the Reinhardtsgrimma wood.—You must begin by choosing a level spot of ground which has sufficient length and breadth (the latter need not be very great) for the operation we are going to describe.—We will take the hill E as convenient for that purpose.—Having determined the direction and length that it is most advantageous to give the line which is to be the base of your triangles, you drive a straight stick or pole into the ground at each end of it (which points we have marked with E and P. Pl. 5. Fig. 5.) and measure it either by pacing exactly, or otherwise. You then draw this line on your paper, determining its length by the scale which you have adopted for your plan*.—We will suppose you begin with the profile

A B.

* The reason why you draw this line according to the scale of your plan, and not according to that of your profile (which

A B.—You place yourself in E.—If from thence you could see the point B, you of course would make that the first point of intersection ; but, as you cannot see it, you must begin with the point of the line A B, the nearest to B that you can discover : this will probably be that point where in Pl. 4. Prof. 1, the fifth perpendicular (from B) intersects the profile, and which on Pl. 5. we have marked with Q. Having fixed your plain table so that the line E P on the paper is exactly in the direction with that upon the ground, you draw upon the paper the lines E, Q. E, H. E, C. E, N. E, d. Pl. 5, of an unlimited length. From P you intersect all these lines with the lines P, Q. P, H. P, C. P, N. P, d ; which intersections give you not only their distances from E and Q, but also from each other. Before you proceed any further with your intersections, as you have now got all the distances of the

(which will probably be larger) is, in order that the intersections, exclusive of their utility in taking the latter, may make a skeleton for the former.

SECTION II. III

principal points of the profile (except the distance from B to Q, and from d to A, which you cannot find by means of intersection, as the points A and B lay so low as to prevent your seeing them) you may proceed to measure the heights of these points; and as we suppose you unprovided with a quadrant, and table of sines and tangents, you may do it as follows:—You place yourself in E, holding a straight pole perpendicular* in your hand, and your assistant stands with another at some distance from you (according to the extent of the level ground) holding his pole exactly on the line between E and Q as perpendicular as possible, in which you direct him. (If these poles were shod with iron and pointed, it would be more convenient, because you could stick them in the ground, and when once rightly placed they would remain so.) You then stand with your eye

* This is easily done by having a plummet fixed to the pole.

close

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close to your own pole (always paying particular attention to keep the pole perpendicular) and look to Q, and call to your assistant to move his hand (or finger if the pole is fixed in the ground) up or down the pole till it, viz. his finger or hand, is in a line with your eye and Q. You then measure the height from your eye, as you was standing, to the ground, and also the height that your assistant's finger or hand was from the ground, and the distance from one pole to the other: with these three data you can find how much lower Q is than E, by a short and easy algebraical reckoning, or by a geometrical construction. We should think the former easiest in the field.

Geometrically.— Draw the line E Q. Fig. 3. Pl. 5, according to your scale, of the length you have found it to be by your first intersection. From E erect a perpendicular E e, equal to the height of your eye from the ground. . Make the
distance

distance $E r$ = the measured distance from one pole to the other; and in r , erect a perpendicular $r s$ = the height of your assistant's hand from the ground during the operation. Prolong the line $e s$ to an unlimited length; let drop a perpendicular from Q , and the intersection of this perpendicular, and the prolongation of the line $e s$, gives you $Q q$, which gives the difference of height between E and Q . As the drawing all these perpendiculars is troublesome in the field, and subject to inaccuracy, you had better find the difference of height by the following short and easy reckoning, in which you have no need of constructing the figure geometrically.—It is clear that the triangle E, e, t , is similar to t, Q, q , and that $t E$ is to $E e$, as $t Q$ is to $Q q$; therefore the only difficulty is to find out the distance from E to the point in which the prolongation of the line $e s$ intersects the horizontal line $E Q$, which you do as follows:

I

Call

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Call the perpendicular line $E e - a$, which we will suppose = 6 feet,

the perpendicular $- r s - b - - = 5 D$.

The distance of the two poles $E r - c - - = 80 D$.

And the distance $E t$, which is to be found $- - - x$.

Then, as the triangle E, e, t , is similar to r, s, t , and as $r t$ is $= x - c$, you may put $a : b :: x : x - c$, and therefore $a x - a c = b x$, and $a x - b x = a c$;

$$\text{And } x = \frac{a c}{a - b} = \frac{6 \times 80}{6 - 5} = 480 = E t.$$

And suppose $E Q$ is equal 2500 feet, then $t Q = 2020$,

$$\text{And } 480 : 6 :: 2020 : Q q$$

$$\begin{array}{r} \text{480) } 12120 \text{ (25 } \frac{1}{4} = Q q. \\ \underline{960} \\ 2520 \\ \underline{2400} \\ 120 \end{array}$$

by which means you find that Q is 25 feet and $\frac{120}{480}$ or $\frac{1}{4}$ of a foot lower than E .

Next;

Next; suppose H to be higher than E, proceed to find the difference as follows:—Place yourself as before with your pole in E; make your assistant stick his pole into the ground exactly in a line between E and H, and as nearly perpendicular as possible; make him put his finger to the pole, and raise it (his finger) till it is exactly in a line between your eye, which you put close to your own pole, and the top of the hill H. You then measure as before the height of your eye, and of your assistant's finger from the ground, as well as the distance from one pole to the other; with these data you can find how much higher H is than E, either geometrically or algebraically: the latter method is the easiest.—Although a figure is not absolutely necessary, yet you may draw one off hand merely to assist your memory, without paying any attention to proportions or exactness, as Fig. 4. Pl. 5. —The first thing to be done is, to find the distance from E to the point W, in which the prolongation of the lines HE,

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s e intersect each other, as that will enable you, by means of the proportion $W r : r s :: W H : H h$, to find the height $H h$.

— Call the perpendicular which represents your assistant's pole $a = 6$ feet; that which represents your own pole $b = 5$ feet. Their distance from each other $c = 80$ feet; and the distance from r to W , x ; of course $E W$, is $x - c$, and $a : b :: x : x - c$; wherefore $a x - a c = b x$, and

$$a x - b x = a c, \text{ and } x = \frac{a c}{a - b} = 480, \text{ and}$$

as $c = 80$, $x - c = E W = 400$, and therefore if $E H$ is $= 2000$, $W H$ is $= 2400$,

$$\text{And } 480 : 6 :: 2400 : H h,$$

$$\begin{array}{r} 6 \\ \hline 480) 14400 (30 = H h, \text{ that is,} \\ \underline{1440} \\ \text{-----} \\ \underline{\text{-----} 0} \end{array}$$

H is 30 feet higher than E , and as E is $25 \frac{1}{2}$ feet higher than Q , of course H is $55 \frac{1}{2}$ higher than Q .—Or you may find this height in a still shorter manner, viz.

Lie

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Lie down on the ground at E; make your assistant place his pole in the exact line between E and H, as perpendicular as possible: make him raise or lower his finger till it is in a line with your eye and the top of the hill: measure the distance from E to his pole, and the height of his finger from the ground.—Suppose the former is 80 feet, the latter $1\frac{1}{3}$ foot, then put

80 : $1\frac{1}{3}$:: 2000 : to the height of H above E.

$$\begin{array}{r}
 \text{I } \frac{1}{3} \\
 \hline
 2000 \\
 400 \\
 \hline
 80) 2400 (30 \text{ feet, the height of} \\
 \quad 240 \quad \quad \quad \text{H above E.} \\
 \hline
 \quad \quad \quad \text{---0} \\
 \hline
 \end{array}$$

In the same manner you can find the height of every principal point of this profile above E or Q.—Having found all these, and made a memorandum of them,

I 3 you

you may then proceed with your intersections, and find the distances of L, I, K, F, &c. from E and P, which at the same time gives you their bearings, and distances from each other. You likewise find how much higher or lower each of these points is than E, and also the height of the principal points of each profile, and their distance from each other. For instance, how much the rivulet that runs through Hauffdorf, and which is intersected by the line E F, is lower than E, and how far distant from it; and the same with regard to the hollow which divides the hill E from I and L, &c. and make memorandums of all this.

We have hitherto supposed the ground for some distance on each side of your base to be perfectly horizontal, however it will seldom happen that this is the case, and therefore, if you are totally unprovided with levelling instruments, you should, before you go out, procure a common

mon level, such as masons and carpenters use, which is to be had in every village. In the point E, Fig. 6. Pl. 5, you drive in a peg, and another in i; the heads of these pegs must be smooth and flat: upon these you lay a board, which must be planed quite smooth, and is generally 6 or 8 feet long, or more, and 3 or 4 inches broad, and you place the level upon it; this level shews you whether the board on which it stands is horizontal or not; if not, you make your assistant drive in the peg at the end which is too high till it is perfectly horizontal: you then look along it, and call to your assistant to move his finger up or down his pole, till it is exactly on the point k, where the continuation of the line E i intersects the pole; and in the subsequent operation (which we have just described) you deduct k l from the height of your assistant's finger from the ground.—It might happen that you knew a day or two before-hand that you were to take the plan, and yet could

get no trigonometrical instruments. In that case you might, in order to perform the above-mentioned operation with more accuracy, get a carpenter to make you two instruments like Fig. 7. Pl. 5.—a b is a piece of wood three feet long, three inches broad, and as many thick: it is divided on one side into feet and inches; on the other side hangs a plummet, in order that you may be enabled to place it perfectly perpendicular; it is pointed at the bottom, and shod with iron: a groove is cut in it, in which is inserted another piece of wood, c d, of equal length with a b, also divided into feet and inches, and which can be flipped up and down.—When you are measuring how much lower any point is than the spot on which you are standing, your assistant fixes his instrument in the ground, and places it perpendicular by means of the plummet: he does not pull out the slider c d, but leaves it in the groove in a b.—Having fixed your own likewise perpendicular,

you

you draw out the slider cd , raising it till the top is in a line with the top of your assistant's instrument and the object: you then see how many feet or inches cd is drawn out of a , and these added to three feet give you the height ad of your eye from the ground.—If you are measuring how much higher any object is than the ground you are standing upon, you of course do not draw out the slider of your own instrument, but your assistant raises his till the top of it, d , is in a line with the top of yours, b , and the object. This method is still subject to some inaccuracy, however we think not so much as that proposed by the author; and the instruments made use of are quite simple and easily procured.

There is however still a quicker and more accurate way of measuring heights than this. It is, to have the plain table, that you make use of in taking the plan of the ground, so made that you can place it in a vertical as well as horizontal position, which
is

is very easy and common. Having made all your intersections, draw a line R S, Pl. 5. Fig. 5, across your plain table, and move the instrument round till this line is in the horizontal direction E Q; then place it in the vertical position, and draw a line R q in the direction of the object Q, which gives you the exact angle that the hypotenuse of the rectangular triangle, by means of which you find the difference of height between E and Q, makes with its base. Then place your instrument horizontally again, and turn it till you find that the line R S is in the direction E H; then place it vertically, and draw the line R h, or hypotenuse: proceed in the same manner with C, N, d, &c. by which means you get the angle that each hypotenuse makes with the base. —You proceed in the same manner with all the other profiles, as mentioned above. —You must always mark each of these lines, as soon as you have drawn it, with the same letter as the object, in the direction of which it is drawn, is marked with
in

in the plan, in order that no confusion may arise, making use of the small letters in the second operation, and of the large letters in the first.

In order now to find the heights, you take with the compasses, on the line R S, the different horizontal distances of the objects from E, which your intersections give you, and from each of these points draw a perpendicular, and intersect the hypotenuse with it, which gives you the difference of height. For instance, take upon R S the distance $RQ = EQ$; from Q let fall a perpendicular, which will intersect R S, making a rectangular triangle, of which the side that is perpendicular upon R Q, shews how much lower Q is than E. In the same manner you find the height of all the other objects.

In order to prevent any confusion arising from making two different operations on the same paper, you may draw all the
lines

lines of this second operation with a pencil of a different colour from that with which you drew the lines of the first operation; that is, if the first are black, make the second red or blue*.

Having finished the skeleton of your plan, and found all the necessary heights, you must, before you begin the plan, of course rub out the lines of the second operation.

It would be advantageous to make your interfections, &c. before you begin your plan, as by that means you not only get the necessary points for your profiles, but also a very good skeleton for your plan, which you will find of great use†.

* In taking plans you should have pencils of different colours, in order to express rivulets, roads, houses, &c. &c.

† We cannot here enlarge on that, as we confine ourselves merely to the profile; but we recommend this operation always before you begin a plan, if you are not much pressed for time, and wish to make it an accurate one.

Having

Having completed this skeleton, you proceed to take the plan, and that being finished, you commit the principal points of your profiles to paper, according to the measures of height and horizontal distance found as above. Those distances which you could not find by means of interfections, as for instance, in the profile A B, the distance from B to Q, and from d to A, you must take out of the plan; and, having thus completed the skeletons of your profiles (if we may use the term) you proceed to fill them up.—In doing this, in order to draw the profile of any hill, you must never place yourself on the hill itself, but always at some distance, and in such a position as to get a good side view of it, as the line of profile will then appear strongly marked: from thence you can fill up the skeleton à coup d'œil, much more easily and correctly than you could if you were on the hill itself.

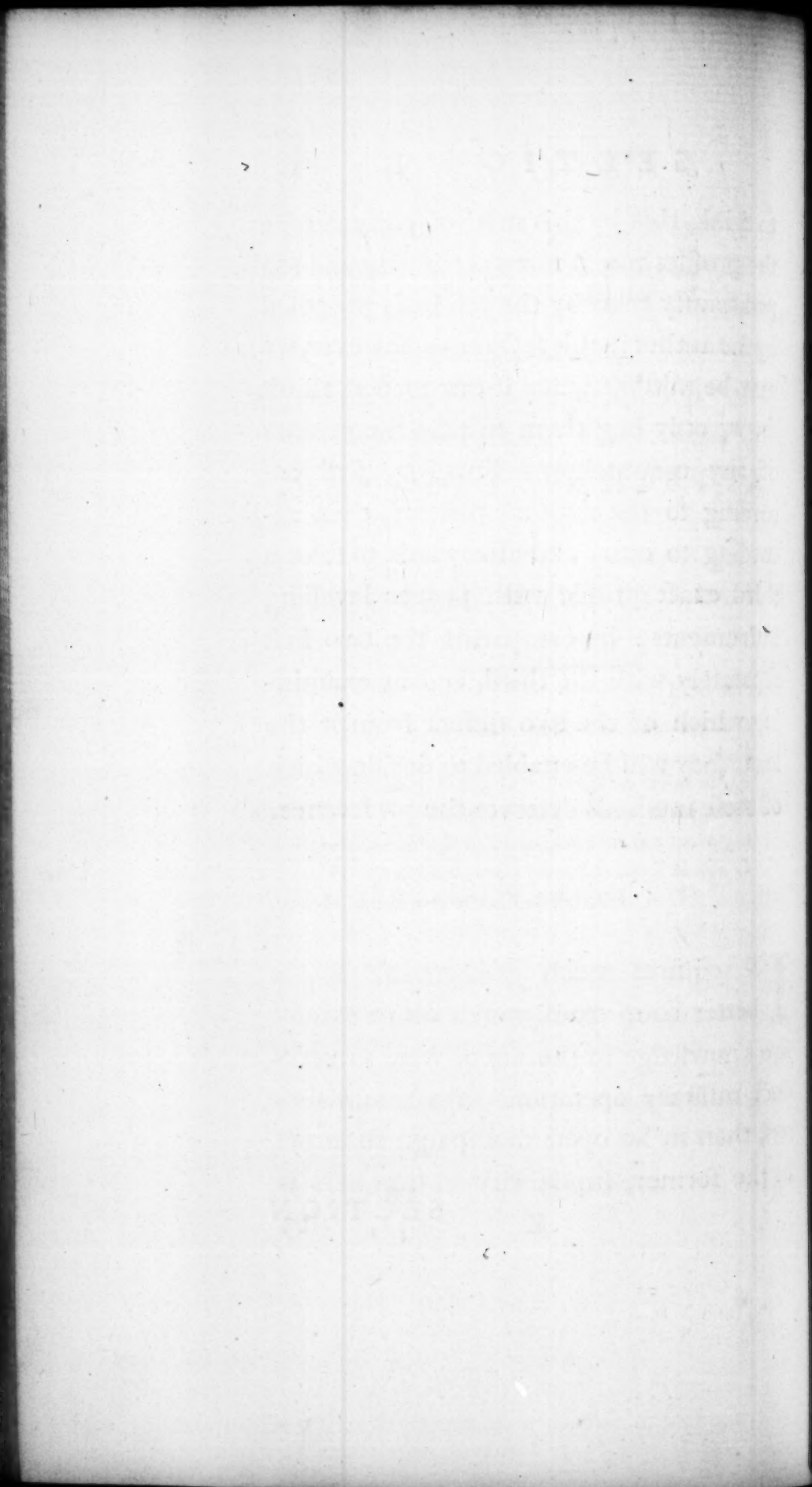
In

In the profile A B, you have not been able to find the height of Q and d above B and A, nor could you do it otherwise than by the assistance of trigonometry, or by means of a tedious operation of leveling. As we suppose you unprovided with instruments for either of these operations, you must judge the angle that the surface makes with the horizon à coup d'œil*.

It is unnecessary to add that the number of points in each profile, whose height and distance you determine in the method we describe, must depend upon the time you have, and, that if you are in a hurry, you must be content with fixing one or two.—At all events we have reason

* Or if you have a plain table which you can place in a vertical position, you can fix it in Q and d, and you will from these points perhaps be able to measure the angles that the hypotenuses of the rectangular triangles (by means of which you find the difference of height) make with the bases as before mentioned.

to think, that by this method you can take the profiles much more accurately and expeditiously than by the methods proposed by the author in this section.—However, we may be mistaken, and if our readers think so, we only beg them to take the profiles of any mountainous situation, first according to the author's method, then according to ours, and afterwards to take a third exact profile with proper levelling instruments: by comparing the two first separately with the third, and by examining which of the two differs from it the least, they will be enabled to decide which of these methods deserves the preference.



SECTION III.

OF THE ATTACK AND DEFENCE OF UNFORTIFIED HEIGHTS.

*Si du genie en vous brillent les étincelles,
Vous trouverez partout des forts, des Citadelles,
Que les mains des mortels n'ont jamais travaillés;
Postes, que la nature a seule ainsi taillés.
L'ignorant voit ces lieux, mais c'est sans les connoître,
Le sage les saisit, ce sont des Coups de Maître.*

L'Art de la Guerre de main de Maître.

IT requires much greater abilities, a better coup d'œil, and a more extensive knowledge in the art of war, to conduct military operations in a mountainous, than in an open champaign country. In the former, superiority in numbers is

K

by

130 ATTACK, &c. OF HEIGHTS.

by no means so decisive.—A small army or corps may post itself, without the assistance of shovel or pick-ax, so advantageously, as to render an attack upon it impracticable even to an enemy of twice its strength : and, should not this enemy find means, through clever and well-concerted movements, to turn a corps so posted, cut it off from its magazines, alarm it for the safety of one of its fortresses, or give it reason to apprehend the destruction of a distant part of its country, and thus oblige it to quit its position, a great part of the campaign will be probably lost in inactivity on the one side, whilst the other is gaining time to strengthen and reinforce itself (which is every thing in a defensive war) and consequently to better its situation so far, as to be able to change its operations from the defensive to the offensive. Field Marshal Daun's camp at Ewanowitz, in the beginning of the campaign of 1758, and his Royal Highness Prince Henry's of Prussia in the year 1759, at
Liebenthal

Liebenthal and Strehle, are proofs of the above assertion.

It is difficult to obtain an accurate knowledge, and form a just idea of a hilly, intersected country, and it requires practice and a good natural coup d'œil.—It almost always happens, that any given tract presents itself so very differently from different points, that you would not know it to be the same.—The roads generally wind so much that they are not only in a great measure concealed from our view, but also they are frequently twice as long as represented on the geographical map, or as they would be in the same space in a flat country. Frequently you find that some ravines and vallies appear impassable from their depth and marshy bottoms, whereas the small wood and meadow roads, which may escape an inaccurate and unobserving eye, make the contrary the case.—Others again seem quite firm and easy to pass, and upon trial

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the horses sink through the sedge or old withered grafs which conceals the morafs, and the waggons or artillery stick in the mire.

As I have already shown in the new edition of my Field Engineer, published in 1774, how an accurate knowledge of these circumstances is to be gained, and in what manner a particular position and its environs, or a tract of country is to be reconnoitred, I shall here proceed to treat of the method of employing the different species of troops to the best advantage in hilly situations.

I shall include,

1. Light infantry or volunteers.
2. Regular infantry of the line.
3. Light cavalry.
4. Heavy cavalry.
5. Artillery.

I. THE

I.

THE ATTACK OF HEIGHTS BY
LIGHT INFANTRY.

FOR these no hill must be too steep, no rock too rugged.—The chaffeurs in Tirol say as a proverb; “Where a goat can go, a man must go.”—Military history, particularly that of the antients, and above all that of Alexander the Great, affords sufficient proofs of the truth of this saying.

It appears therefore, that light infantry are the best adapted to ascend and attack rugged and steep heights; but they must be supported by regular infantry of the line, otherwise they would not so easily maintain a post after having carried it.—Their attack or charge should not be

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made

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made quite regularly and in close order, but à la débandade, and in a full run.—If on the face of the hill there are dips, hollow ways, &c. that can cover them from the enemy's fire, they should make a short halt in them, particularly if they have nearly reached the enemy, in order that they may be fresh and not blown, when they charge him.

All firing with small arms must be forbid on pain of death. The bayonet must here determine every thing.—Firing in this case is the refuge of the faint-hearted, who are afraid of closing with the enemy; it has hardly any effect, and wastes time, which is so precious to the assailants.—The advancing slowly exposes the troops to much greater danger; for,

1. You remain longer under the enemy's fire.

2. The

2. The courage of the soldiers cools when they have time to reflect on the melancholy fate of their comrades, who are either grievously wounded or killed by their side : whereas by advancing with rapidity they have not time to think, and soon lose sight of those objects which might serve to damp their spirits.

3. Further, by advancing quickly you are more likely to intimidate the enemy, and you give him no time to think of opposing you by clever offensive movements on his part. His courage sinks with every step you take, which is both natural to the human mind, and consistent with reason ; for, in proportion as you advance does his danger draw nearer ; and it is very certain that the danger which you see is approaching, and which you cannot avoid, operates much more forcibly on the mind than that into which you voluntarily plunge yourself.

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We imagine that the possession of a fortress, intrenchment, or strong post, gives us a decided advantage over our enemy, or perhaps that it entirely secures us from his attack. But if he proves bold enough to attack us, we cannot suppose that he does it without having well considered his undertaking, and without a confident hope of success. We conclude, therefore, that he is far superior to us either in force or in bravery, or we lose our confidence in our post, and those who made choice of it.—The natural consequence of either is fear, which must be productive of our destruction *.

If

* We think this is carried a great deal too far; for, if we admit the force of Captain Tielke's arguments, and adopt his idea literally, we must also allow the natural and only inference, that it is impossible to defend a post against an enemy who is bold enough to attack it vigorously.—Now this never can be established as an axiom—Experience contradicts it. What is the advantage of a strong post, if it is impossible to defend it? We are led to suppose that the author means to enforce this idea only in part, though he expresses himself positively.—It is a just and common-received opinion, that the advantage is generally on the side of the assailants:

If the nature of the ground is such that you cannot make the attack on the enemy's flank, but must advance straight up the hill in his front, the light troops, as soon as they have ascended, should endeavour to throw themselves with impetuosity on one or both of his flanks, and if possible get in his rear. If this attack is supported by regular infantry or grenadiers, who advance against the enemy's front, the light troops, who have manœuvred so as to get into his rear, must keep up a brisk fire, which will contribute much towards creating confusion in his line, and probably occasion its total disorder and flight.—If the enemy should

failants: they direct their attack on the weakest point of your position; their service is more active: the very advancing to the attack makes them eager, and heightens their courage.—But surely all this does not argue the impossibility of defending a post. On the contrary, the defendant in a good post has likewise considerable advantages on his side, which, if he makes proper use of them, may in some cases almost counterbalance those naturally attendant on the assailants; but he must manœuvre; he must make an active, and (if we may be allowed the expression) an offensive defence.—*Translators.*

not

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not have secured his flanks and rear, and moreover should be so imprudent and stupid as to remain immoveable on the summit, and not advance to the edge of the declivity in order to oppose your ascending by raking with his fire the whole face of the height, you may be certain of the victory.—The greatest difficulty is already overcome, and the mere shock of the attack will probably not cost you much. You have not above one, or at most two fires to sustain, and these will be given without much aim, and by troops whom your rapid advance has already intimidated.

If the enemy is provided with cavalry, the troops, even the light infantry, must form again as soon as they have ascended the height, and make the attack connectedly, and in close, compact order; and if they fire, at least half must always remain loaded and ready to fire, in order to oppose the attack of the cavalry.—The
bayonet

bayonet I consider as the best weapon to use in attacking infantry; but, on the other hand, infantry must defend itself against cavalry by fire.

If the enemy gives way, the light infantry must pursue him briskly, and keep firing upon him, in order that he may not recover from his disorder, and form again: but should there be regular infantry of the line joined in the attack, these will of course advance on the enemy as he retreats, and the light infantry must in that case endeavour to be before-hand in occupying the defilés, bridges, fords, &c. that he must pass in his retreat, and by this means cut off part of his troops, and deliver them into the hands of the corps which is pursuing them. Villages, particularly those which have churchyards, and stone-walls round the gardens, are extremely adapted to this purpose.—You occupy them, and dispute the passage with the enemy.—No intrenchments
or

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or previous preparations are necessary on this occasion; for, neither has a beaten enemy courage, nor do the pursuing troops allow him time to make a regular attack: the sudden check surprises him; he endeavours perhaps to move to a flank and avoid the village, &c.; but instead of saving himself by this, he either unavoidably approaches his pursuers, or at least gives them an opportunity of coming up with him.

As long as the enemy is not entirely beaten, you should not stop to take prisoners, but only secure the officers, and make the rest as they surrender throw their arms away; otherwise you will advance too slow in the pursuit, and weaken yourself too much by the guards you send back with those who are taken; at the same time, if you have a reserve, you direct such as throw down their arms to deliver themselves up to it.—By this method, it is true, you will not take so many prisoners,

prisoners, but surely that is not to be put in comparison with a decisive victory, which you will most likely gain if you pursue briskly, when on the other hand, if you stop and disperse to plunder and take prisoners, the enemy will form again, and in all probability regain the lost advantage.

DEFENCE OF HEIGHTS BY LIGHT INFANTRY.

IN the defence of heights you must endeavour by all possible means, by clever movements, by quickness and courage, to prevent the enemy from ascending; for, once he has gained the summit, all opposition, especially from light troops, will be in vain.—You should post a part of your light troops (particularly if you are not supported by regular infantry) quite on
the

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the crown of the hill, as a reserve, and form the rest on the edge of the hill and on the declivity, occupying at the same time any ravines, hollow ways, &c. that may present themselves *.—The troops in reserve must be formed quite in close order, and divided, according to their strength, into battalions, companies, or platoons.

Should the enemy, notwithstanding your resistance, ascend in one or more places, as many of the above-mentioned divisions in reserve as are thought necessary advance immediately against him (the others remaining in good order, and ready to act as occasion may require); charge him with their bayonets without firing; drive him down the hill again, and give him two or three rounds in his

* A very essential point also is, to range the infantry exactly according to the contour of the height, in order that every part of the face of the hill may be equally defended by the fire.—*Translators.*

flight;

flight; they must not, however, pursue him, but remain formed either on the edge of the declivity, or fall back to their former post, and leave the pursuit to the other troops, who by this time, in all probability, will have recovered from their disorder.—The troops posted on the face of the hill, and those who occupy the hollow ways, &c. must, from the first, dispute every inch of ground.—Their principal defence consists in their fire; this therefore must be brisk, but more attention should be paid to the exact direction of it, than to the quickness with which it is executed: nay, they should endeavour to make every shot take place. They must, at the same time, cover themselves as much as possible from the enemy's fire, which coming from the lower ground, will at any rate be of little effect. This may be effected by different methods, (viz.) by throwing themselves into hollow ways, and firing out of them; or
by

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by concealing themselves behind banks, stone-walls, paling, trees, &c.

If the enemy attacks in one or more columns, that part of the troops against which the head of the column immediately comes, should on its approach retreat very slowly, keeping up a constant fire, whilst those on the right and left attack the flanks of the column, and endeavour to break in upon it*.

Should this succeed, or should the enemy, after having ascended the height, be entirely repulsed by the reserve, all the troops except the reserve may pursue him as far as possible, and may in such a case take as many prisoners as they will; for the former objection does not here hold good. It is to be observed, however, that

* The author of course means, that those who were retiring slowly as above directed, should face about and attack the head of the column at the same time that it is attacked in both flanks.—*Translators.*

those

those who occupy important posts, such as bridges, fords, hollow ways, &c. must not quit them to join in the pursuit, otherwise the enemy might seize on those posts to your great inconvenience.

2.

ATTACK OF HEIGHTS BY REGULAR INFANTRY OF THE LINE.

IF the corps that is destined to the attack has light infantry with it, they will be made use of as directed above, when treating of the attack of heights by light infantry.—If it has none, the deficiency will be supplied by volunteers, or companies of grenadiers.

The infantry of the line advances in close, compact order, and according as the

L

ground

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ground permits, either in column, line, or, which is generally the best way in the attack of heights, by battalion, or even by companies, should the ground be very confined and difficult.

Should the light troops or volunteers be repulsed and pursued, they can always form again in the rear, or on the flanks of the infantry, and renew the attack *.

The infantry advances regularly, without either running or boggling, and it must be attentive neither to crowd so

* In case of such a repulse, the regular infantry must take care not to be thrown into confusion by the retiring troops, and to that end they must make openings to let them through, wherever they see them coming. For, however it may be consistent with the true principles of tactics, and however necessary it may be to make it an absolute point in discipline, yet it is not to be supposed that beaten troops, pursued by a victorious enemy, will always in their retreat move quite regularly round the flanks, or through the stated intervals of the troops in their rear. Both cavalry and infantry therefore should be practised to make these openings readily. The movement is quite simple, consisting in nothing but the doubling of a few files, a platoon, or division.—*Translators.*

much

much as to occasion disorder, nor open its files.—Firing with small arms would not only in this case be useless, but hurtful; nor should it be done on any account till you have ascended the height, and almost closed with the enemy; and then indeed I would rather that the musketeers should charge at once with the bayonet, and the grenadiers with the sword*.

Firing either with cannon † or small arms is more particularly adapted to the

* The grenadiers of the Austrian army, in which the author served, sometimes made use of their swords in the seven years war; it strikes us, however, that the sword is a very bad weapon for any infantry, and that the bayonet is in all cases to be preferred to it.—*Translators.*

† It must be well understood, that the author certainly does not mean by this to explode the idea of cannonading the particular point of the position of an army, on which you intend to direct your attack, previous to the advancing to that attack, which is of course always done, if the ground permits it. No body can deny, that the dismounting the enemy's batteries, and severely galling his troops, will procure you manifest advantages. The author can only mean, that the troops, when they are *actually advancing* to the attack, should not lose their time by stopping to fire, as they certainly will in that case be the sufferers.—*Translators.*

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defence than the attack. The force of the assailants consists in the bayonet, and in the rapidity of their motions.

As soon as the enemy begins to retire, whether it is in confusion or in good order, the attacking infantry must be more particularly attentive than ever to keep their files well closed, and their ranks well dressed.—They must pursue at a steady, quick pace, but without running, and keep up a brisk fire, observing always that nearly the half is constantly loaded; to which end the firing should be performed either by subdivisions, or by the two first ranks only, the third or rear rank being considered as a reserve.—By the observation of these rules you will always be prepared, and ready to act either offensively or defensively, in case the enemy should make a stand, should be supported by a reserve, or should advance cavalry against you.

If,

SECTION III. 149

If, as is commonly the case, a detachment only of the army or corps pursues the enemy, that detachment must take particular care that it does not fall into an ambuscade, or allow itself to be cut off from the main body. — The infantry, therefore, as it advances, takes possession of all the passes, such as the bridges, fords, villages, hollow ways, &c. — Videttes and small parties must also be posted on the summits of the eminences, and in those parts of the roads from whence they can see the furthest, particularly where the roads fork : these will immediately, with all possible expedition, report to the commanding officer of the detachment, if they discover any of the enemy's troops advancing.

DEFENCE OF HEIGHTS BY REGULAR
INFANTRY OF THE LINE.

IF you have no light infantry, grenadier companies or volunteers must occupy the declivity of the hill, and any ravines, hollow ways, &c. that may present themselves.—It is of course understood that all important approaches and posts, such as church-yards, stone houses, bridges, &c. must be occupied by regular infantry, or rather by grenadiers, particularly if they can be immediately supported from the principal post or position.

You range your infantry upon the edge or brink of the declivity, following the contour of the height, and so as to enfilade the roads, ravines, or hollow ways, which run in a perpendicular or oblique direction to your front; forming them
either

either in a complete line, or by battalions or companies, with large or small intervals, according to your strength. At all events, however, you must be careful to form a strong reserve; for the enemy may ascend the height where you least expect it, and fall on your flank, or possibly get into your rear, which, though it should be executed only by an handful of men, is always very dangerous, being apt to create immediate dismay and confusion amongst the troops.

I must recommend firing in the defence as much as I condemn it in the attack; but it must be executed with effect, for an empty noise will neither stop the enemy, nor make him at all shy of advancing; on the contrary, the less the effect, the bolder will he grow, and only laugh at such a shadow of defence, from which he does not in the least suffer.— You should, therefore, give the troops full

time to load and aim *, and not let them begin to fire when the enemy is too distant.

* Whether the soldiers when in the ranks should be taught to aim or not, or whether they should be made to fire quick or slow, are points on which officers differ very much.—We are far from pretending to decide on the subject, however we may be allowed to offer our ideas, and submit them to the decision of others. It seems to be a general opinion amongst officers who have served much, that the soldiers seldom aim in an action after the first fire; we do not mean in *skirmishes*, but in *regular actions*.—Indeed if you consider it, it appears, that they scarcely could if they were inclined to do it, on account of the smoke.—If this is the case, one would suppose, that it is best to make them fire as quick as is consistent with loading properly; because it is better to give the enemy six rounds without aiming, than three rounds equally without aiming: however, they must be well instructed never to hurry their loading too much.—It seems that they should be accustomed to present low almost in all situations, but particularly when posted on a hill, because, partly from the motion of pulling the trigger if it is stiff, but principally owing to their being in a hurry to take the piece down from the shoulder and load again, they frequently raise the muzzle at the same time that they fire, and therefore, if they were to present horizontally, many or indeed most of the balls would go too high. This is the reason why the Prussians present so low.—Before the action begins, you may shew the men in what direction they are to present, that is, whether in a horizontal direction or below it, and how much below it; (this may be done by the officers

tant.—It is better to allow him to approach within a good shot.—The first round is most essential, and must not be given at random; if executed, as it ought to be, with great effect, it tends much towards abating the enemy's courage, and diminishing his eagerness to advance.

Is it not absurd and ridiculous to begin firing with musketry at the distance of 5 or 600 paces? And yet I have often seen it done.—I well know many assert in defence of this, that you should engage the soldiers attention, in order that they may not have time to reflect on the approaching danger, and become faint-hearted;

cers commanding the respective subdivisions) and when the enemy is near enough for the musketry to have effect, you should begin, and keep up as brisk a fire as possible.—One very essential point is, to accustom the soldier never to move his piece out of the direction in which he presented, till it has gone off; this is an excellent lesson; but, notwithstanding all the instruction he may have received, he will most probably raise the piece a little when he fires.—What we have said above is founded on the Prussian principles and practice.

Translators.

but

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but this way of doing it, would, I think, in most cases, have quite a contrary effect; for, the seeing that their fire did no execution, that their defence was of no avail, and that the enemy, notwithstanding their efforts, continued to advance in good order, would, in my opinion, be likely to intimidate the defendants, in the same proportion as the assailants would be encouraged by it: moreover, by superfluous and unnecessary firing you may sometimes be reduced to the melancholy situation of not having ammunition when you are most in want of it: if you compare in a battle the number of musket shots that are fired, with their effect, the small proportion that the latter generally bears to the former is quite astonishing.—The original fault may be traced to the method of training the troops, in which more attention is often paid to the parade, than to what is really essential from its immediate relation to actual service.—The making every foldier of a battalion practise

practise at a target twenty times a year, would be of much more real use, than if the battalion was to fire a thousand parade rounds in the closest and most precise manner possible.—The mere popping together is certainly a trivial consideration, when compared to that essential point of aiming with exactness.

You should not post yourself and wait the approach of the enemy quite on the summit of the hill, for by so doing you cannot even see him, much less fire upon him, till he has entirely ascended, Pl. 4. Prof. 2. k: and then it is in general too late.—You must advance quite to the edge or brink, and endeavour as much as possible to rake with your fire the whole declivity, that is, so that the shot lines run parallel to the slope of the height, Prof. 2. b. I would therefore make the front rank kneel, and fire either by ranks or divisions, observing always not to allow the whole battalion to fire at once. The
 soldiers

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soldiers must aim at the enemy's feet, which should be a constant rule when you fire from an eminence, otherwise the shot will most probably be lost in the air.

If the enemy continues advancing notwithstanding your fire, you should, when he has nearly reached the edge of the height, fall back eight or ten paces (without facing about) close well the files, and when he ascends, charge him with impetuosity before he has time to recover himself, or to redress the disorder which the attack will naturally have occasioned in his ranks, and drive him down the hill again. If this is executed with proper resolution and order, it is most likely that it will be attended with success; for the enemy will construe your retiring a few steps into a flight, and, induced by this idea, will probably endeavour to gain the summit of the height with more rapidity and less order, by no means expecting
such

such an opposition *. Should this manœuvre not have the desired effect, or should the troops discover too much want of confidence to undertake it, the reserve must advance compact and in good order, whilst the beaten troops retire through it, form again in its rear, and compose a new

* We do not see the use of falling back before you charge; on the contrary, we think such a movement may have dangerous consequences, and in some cases perhaps degenerate into a flight: it appears to us that the best general rule for defending heights may be comprised in a few words, viz. "Place your infantry and artillery so that they can sweep the whole face of the height with their fire—Continue this fire till the enemy is pretty near you (perhaps within twenty or thirty paces, according to circumstances); then make a vigorous attack upon him with bayonets; which, as he is tired and out of order with ascending the height, you fresh and in possession of the advantage of ground, will probably succeed.—If you beat him back, do not pursue him with your regular infantry, but halt, fire, and re-occupy your post.—Your cavalry or light infantry may pursue him.—As often as he repeats the attack, repeat this mode of defence.—You must, however, observe, that if the hill is very steep, your troops will be apt to get a little out of order in making the charge, which therefore, in that case, must be very short.—If you have cavalry, it will of course act on the flanks of the enemy's attack, or otherwise as opportunity offers."—These we offer as our ideas, and submit them to the decision of superior judges.—*Translators.*

reserve.

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reserve.—Should you, however, notwithstanding all your efforts be forced to retreat, you must perform it with as much order as possible, and if you have no light troops you must send out detachments of regular infantry to occupy all the passes. —The battalions must march in such a manner as to be able to support each other. —If there are in the retreat any heights which command the rest, or from which you can defend any particular road or pass, you must occupy them ; and more especially should you take possession of stone-houses or church-yards, in which the troops must defend themselves to the last man, in order to gain time for the rest to retreat.—The forming squares is by no means advisable.—They are not a very good formation in a plain, and in a hilly, intersected country, they are not on any account to be made use of.

If the enemy is very superior to you, the best thing that can be done in the re-

treat

treat is, to sacrifice a part to the welfare of the whole, and to place one or more battalions in a good post, which they must maintain as long as is necessary to secure the retreat of the army or corps.

3.

ATTACK OF HEIGHTS BY LIGHT
CAVALRY.

IT is certain that the same advantages cannot be drawn from cavalry in a mountainous and intersected, as in an open champaign country. The light cavalry, however, may still be made use of. There are few hills so high and steep, that a hussar cannot ascend them if he has resolution enough to do it.—Hussars, therefore, are preferable to any other troops for reconnoitring, and gaining an accurate

rate knowledge of the environs, or of any particular situation : and this is a most essential point, especially when the army is acting in a mountainous country.—Your position may be apparently excellent : the enemy discovers some height or pass that you have neglected to occupy ; he takes possession of it, and at once renders your situation weak, or possibly quite untenable. If it were still the practice to make dragoons act as well on foot as on horseback, they would be extremely useful in such countries as are alluded to above.—In some services indeed they remain on the old footing.

You may sometimes get into the rear of heights by marching along the ravines or hollows which surround them, or by making a considerable detour ; but the infantry move too slowly to be employed on such an occasion, as the distance you have to march is in general considerable.—It is also a bad plan to mount infantry
on

on the croop: it fatigues the horses, and renders them unfit to ascend the steep heights, at the same time that the infantry themselves become stiff and inactive for want of practice in riding.—Dragoons are much more adapted to this service.—They can arrive at any particular point with the greatest expedition, dismount, throw themselves into hollow ways, houses, mills, &c. in short, perform all the duty of light infantry; and they can at least maintain their post till the support of regular infantry arrives.

No cavalry, however, not even hussars, should be left in hilly and enclosed situations, without being supported by infantry.—For they cannot patrol and examine all copses, ravines, &c. in order to prevent their being surprised or cut off, as they are often so marshy that the horses cannot pass.—Both light and heavy cavalry should avoid attacking down

M

hill.

hill*.—The horse in descending has no power, he easily falls, and the rider is so much occupied in endeavouring to keep him up and manage him, that he cannot make use of his sword with advantage.—In ascending the contrary is the case; the horse makes use of all his strength, and the rider, who has no occasion to give him any other assistance than to sit close, can use his sword as he pleases.—It is understood, however, that the height is not too long or steep, otherwise the horses will be blown.—In attacking up hill or down, the ranks and files will naturally open a little, but they must be immediately closed as soon as you reach the summit†.

* It has before been observed, in a former note, that Captain Tielke seems to lay too much stress on the disadvantage of attacking down hill with the cavalry.—We refer the readers to that note, and we shall in this place only remark, with regard to what he says of the use of the sword, that we imagine the success of the attack is generally decided before the sword can be used at all; and that the force of the attack consists in the close, compact order, and velocity of the troops.—*Translators.*

† You will not have time to do this if you meet the enemy on the summit, therefore the greatest pains must be taken to keep the files close in advancing.—*Translators.*

SECTION III. 163

No firing must be allowed of.—The sword is the only weapon for cavalry to use in the attack.

DEFENCE OF HEIGHTS BY LIGHT CAVALRY.

EVERY thing that I have said of the attack holds good also in the defence.

I shall only add the following observations.

Dragoons and hussars should, unless the nature of the ground prevents it, (which would be an unpardonable fault in their position) advance to meet the enemy, and never wait his attack. They must, however, observe, not to advance so far as to expose their flanks, or endanger their being cut off from their post.—The cavalry which gives the first shock has a decided advantage, and the best must

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inevitably

inevitably be defeated, if it remains motionless.—The principles of mechanicks, experience, and nature, all combine to prove this; my readers therefore would consider any further reasoning of mine on the subject as quite useless.

If the cavalry is repulsed, it must not fall back at once upon its infantry, by which the latter would, in all probability, be thrown into confusion, and put to flight; but it must retreat round the flanks, and form again in the rear, under protection of the fire*.

* We refer our readers to the first note annexed to "The attack of heights by regular infantry of the line."

Translators.

4.

ATTACK OF HEIGHTS BY
HEAVY CAVALRY.

YOU should expose heavy cavalry or cuirassiers as little as possible to the fire of the enemy's cannon, and cover them from it by forming them in a hollow; or otherwise, as occasion may offer, till the attack.

If it is possible to do it, it is very advantageous to place them so that the enemy cannot discover them, for their sudden appearance is likely to confound him; and also, unless by accident he should have some cavalry at hand where they make their attack, he will not have time to oppose any to them.

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The attack must be executed with rapidity, sword in hand, but without firing. Nothing is more dangerous for infantry than a resolute attack of cavalry; and it generally succeeds, if it is made with determination, vigour, and intrepidity.—The war from 1756 to 1763 affords many proofs of this, some of which I will lay before my readers.

In the battle of Collin, the Saxon light horse regiment of Prince Charles, commanded by Lieutenant Colonel Benkendorf, broke into the Prussian infantry, and took seven hand of colours; it was supported by the two regiments of Prince Albrecht and Count Bruhl, who attacked the rest of the Prussian infantry in the flank and rear.—This transferred the victory, which the Prussians had already gained, from them to the Austrians.

At the battle of Zornsdorf, the Prussian cavalry charged and broke through
the

the right wing of the Russian infantry. This gained the Prussian infantry, which had already given way, time to form again. They did so; supported their cavalry; and the whole right wing of the Russian army, consisting in General Fermer's corps, was driven in the utmost disorder into the woods and morasses.

On the 25th September 1759, the Prussian Major General Gersdorf, with his regiment of hussars, broke into a square commanded by the Austrian General Vehla, and obliged the troops that composed it to surrender themselves prisoners of war.

In the battle of Torgau, in 1760, the Prussian regiment of dragoons, Bayreuth, charged and broke in upon the Austrian infantry, and made considerable havock in seven battalions.—It would by this effort have determined the victory, had it not been attacked and repulsed by two Aus-

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trian regiments of cuirassiers under the command of Lieutenant General Pellegrini. Soon after this, in the same battle, Major General d'Ayatzatza, with the carabineers, made a successful attack on the Prussian infantry, and Captain Fackner's troop of the regiment of O'Donel took nine hand of colours.—I could cite many more examples, but none of greater importance.

The attacking cavalry must always be supported either by cavalry or infantry, into the rear of which it may retreat and form again, in case of a repulse.—It is by no means advisable to attack with the whole cavalry at once, for a sudden panick may produce worse consequences amongst them than amongst the infantry.

You may sometimes have occasion to attack huffars with your heavy cavalry; but from the activity of their horses they are so quick and ready in their movements,
that

that these encounters generally have no other effect than that of wearing out and destroying your troops.—It should therefore be a rule to employ cuirassiers or heavy cavalry against cavalry of the line, or infantry : against these latter they will certainly succeed, if they attack with resolution, and are not too much galled by artillery.—You should never lead them up in the face of batteries ; that would be sacrificing them without any probability of success.

DEFENCE OF HEIGHTS BY HEAVY CAVALRY.

YOU must never leave heavy cavalry in any post without infantry or light cavalry, and always endeavour to place it where the ground is the most even, and the least confined or intersected.

Its

Its force consists in the shock.

Firing is ridiculous and useless in light cavalry : but in heavy it may produce the worst consequences, and therefore it cannot be too peremptorily forbid.

Had I a post of the utmost importance to defend, for instance, such as that near Maxen (set forth by me in a following part of this work as the *third position*) where the retreat of the cavalry would be extremely difficult, and not to be executed without great loss, I would make them throw down their carbines and pistols ; this would rid them of an incumbrance, render them more fit for quick movements, and produce the good effect of making them use with the utmost resolution their swords, on which alone they could rely. If I maintain my post, the arms are not lost ;—if I am obliged to retreat, they are certainly the least loss I can expect on such an occasion.

As

As to the attack itself, it must never be waited for by any cavalry; they must always advance against the enemy, and charge with the greatest impetuosity, but with well-closed ranks and files.—Whether the attack is made by squadrons, regiments, in echecquier or in line, it is always proper, particularly if you are acting against cavalry, or if the enemy has any at hand, to keep the half, or at least a third, in a second line or reserve, formed with large intervals, some hundred paces in the rear.—Should those that attack be repulsed, they retreat through the intervals of the second line, and form again in its rear, whilst the latter either attacks the enemy, or keeps him in check, according to circumstances; in this manner the attack may be renewed more than once.

To enter into a more ample detail of the cavalry service, and their manœuvres, would be contrary to my view; and it
would

would lead me into the discussion of a subject on which I am not sufficiently informed, having never served in the cavalry.

5.

ARTILLERY.

ACCORDING to my original intention, I shall not treat of the general service of artillery in the field*, but confine myself merely to the particular manner of making use of it in hilly situations.— Here it is not so easy a matter to conduct the service of it cleverly as in flat open

* The French Colonel Guibert's, *Essai général de Tactique*, as also Monsieur Puget's treatise on the service of artillery, contain much useful matter on this subject, although the latter, in order to support his opinion, lays down some positions which are evidently accompanied by prejudice.

Author.

countries;

countries, and you may fire away a great deal of ammunition, without procuring any advantage; this, however, is the least of the evils attendant on the want of skill; for the courage of the enemy will increase as he perceives your fire to be of little effect, and in the same proportion will that of your troops decrease.—I have entered into a minute detail of the different kind of shots in my Field Engineer*, to which I now refer my readers. I shall therefore add some precepts to those alluded to, or explain the latter more particularly.

1. “ Between the mouth of the piece
“ and the object against which you direct
“ your fire, there must be no obstacle
“ which prevents your drawing, in idea, a
“ straight line, from the one point to the
“ other.”

* In the second edition, which appeared in 1774, from § 251 to 258. In the first edition, from § 181 to 187.

Author.

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It is of course understood, that I mean here to speak of point blank, and not ricochet firing.

I think it most probable that no one who has served campaigns with attention, will consider this position, plain and evident as it appears, to be superfluous; at least I have seen people act in opposition to it more than once.

As the side or face of a hill does not immediately from the top or crown of it form a sharp angle like a parapet, but on the contrary is arched in its slope, it is impossible to bring the cannon forward quite to the proper edge of the declivity, unless you first make the ground where you intend to place them horizontal, Pl. 4. Prof. 1, 2, and 3. A few paces make a very great difference in the line of direction; as for example:—If the piece is planted on the spot C, Prof. 1, the whole of the height, even the point N, is entirely untouched

untouched by the shot, and they are lost in the air. If I advance 100 paces, I can bring my guns to bear upon the point N; and if I advance still further to the point a, I can defend the whole of the ground from thence to b.

This will be found to be the case in most hills, as may be seen in the other profiles, by drawing the lines which the shot will describe from the different points*. A cannon cannot be pointed beyond a certain degree of depression, nor is it possible to depress it so much as a musket.—A great part therefore of the declivity of a height will remain totally untouched by the cannon shot, though it may be well defended by the fire of musketry; Prof. 3. n, o. If, on the other hand, you fire from the lower ground

* In the plans 2 and 3, I have not drawn the shot-lines; they fill such plans too full; besides that, they will not much assist the person who cannot represent them to himself without their being drawn in the plan. — *Author.*

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against the height with the cannon, the troops posted on the height need only retire a few paces; and even if when standing up you see their breasts, your fire will go over them, because the cannon is so much lower than your eye. I have, however, not only seen people often fire with the artillery in the case just cited, but even when they could scarcely discover the enemies hats.

It appears from what is above remarked, that you should always bring the artillery as forward as possible on the declivity of the height, and even dig away the earth where the trail of the carriage comes, and place large stones, or drive in strong pickets before the wheels, to prevent the guns running down the hill.

If you can plant the cannon upon the face of the hill where the descent is most gradual, it is so much the better; and this may sometimes be done by means of a ridge,

ridge, road, or, in short, any break that may be found in the declivity.—This is more practicable with field pieces; and I have therefore, in the third projected position, in the fourth section, placed the field pieces of the post F in f, (see Pl. 3. f, and Prof. 3. o); thus placed, they defend the whole of the foot of the hill, and the hollow way, which latter answers the purpose of an intrenchment to them.

2. " The object should not be too dif-
" tant for the point blank shot of the piece,
" for shots fired with an elevation are al-
" ways uncertain."

It is impossible to determine exactly the distance of the point blank shot, although many trials have been made, in different armies, of this, as well as of the furthest, or elevated shot.—I could insert several tables on this head, if I considered it at all useful to my readers. It does not depend merely upon the calibre of the piece, but also on the length of it, the construction of

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the chamber, the weight and construction of the carriage, the quality of the powder, the smoothness and exact rotundity of the ball; nay, even the air makes so great a difference, that the artillery officer must be well acquainted with each particular gun under his command, and know exactly how far it will carry*.

It often happens, that officers, both of the infantry and cavalry, do the artillery
officers

* Although the reasons which the author mentions make it impossible to ascertain exactly how far cannon will carry, yet, as a person who has *not some idea of it*, cannot be a competent judge of the advantages and disadvantages of a position, or make a judicious disposition of the artillery, either in the attack or defence, we think that the insertion of a table of these distances will not be unacceptable to some of our readers.—The table at the end of the volume shews the distance that the Saxon *field artillery* of different calibres carry; also the length and principal proportions of the barrels, and the quantity of powder with which they are loaded.—We are aware, that it would have answered the purpose, if we had given merely the distance that each piece carries; but we thought it would be more agreeable and satisfactory to artillery officers (if there should be any such among the number of our readers) to have, at the same time, some details of each piece. The account from which this table is extracted may be relied upon as exact. We have been at considerable

officers injustice, in requiring more from them than they are able to perform.—In general, they think that the artillery does not fire soon enough; without considering that you waste a great quantity of ammunition by firing at a distance, which you can only reach with an elevation of the gun.—Out of a great number of shots you may perhaps happen to kill a horse; but that will but ill repay your waste of powder and ball, not to mention, that by expending your ammunition uselessly, you may reduce yourself to the situation of experiencing the want of it, when you could use it with most advantage.—I must here observe also, that the quickness in firing is often carried to excess. You will see artillery officers fire away as fast as they can, without attending

considerable pains in reducing all the measures from the Saxon to the English measure. As this work may be called a Saxon work, being written by an officer of the Saxon artillery, we have thought proper to insert a table of the field artillery of that country. A table of the English artillery would be unnecessary, as every officer has it in his power to procure that whenever he chuses.—*Translators.*

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in the least to their aim, and throwing away their fire at random. Let us suppose that the enemy, perceiving our inclination to keep up a constant uninterrupted fire, amuses us with false attacks till night, and then retires, making us believe that our fire has forced him to do so.—On this supposition, it is a question, whether we should not be lulled into inactivity by the pleasing idea of having gained a victory, and neglect to procure a supply of ammunition; or, on the other hand, whether it may not be impossible to get such a supply in time, owing to the distance of the depot. In either of these cases we are lost: the enemy makes a real attack the next morning; and we are deprived of our defence.

It often happens, that the enemy's balls reach us, when ours of the same calibre cannot reach him—this is a very unpleasant circumstance for the artillery officers, for every one immediately blames them,

them, without considering, that the cause exists, either in the length of the piece, the thickness of the metal, the quality of the powder, or the smoothness and rotundity of the ball.

3. " The ground that the enemy has to pass over to arrive at us, must be enfiladed or raked by our artillery."

This is generally attended with some difficulty, when you place batteries on heights; for, in order to accomplish it, the face of the height must be one continued gradual slope:—as for example, Pl. 4. Prof. 2. k, m, where the shots from I, sweep the whole face of the declivity. If the descent is too much arched from the top, as for example, Prof. 4. F and E, it is impossible to defend it with artillery, however forward you may bring it, and it would therefore be absurd to plant cannon with this view.—But there is no height that you cannot defend with musketry,

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for the infantry can always advance as far on the declivity as you find necessary.—When therefore you are obliged to occupy a height which you cannot defend with artillery, you should endeavour to flank it by batteries, erected on such points of the neighbouring heights as may be suitable to your purpose.—If this also is impossible, you must line it the stronger with infantry.

It often happens that the shot fired from cannon planted on the summit will strike the foot of the hill, whilst the middle (that is the intermediate space from the point where the battery is placed to the point where the shot strikes) remains untouched:—as for example, Prof. 3. from n to q. You must therefore endeavour to defend this space by a battery from a neighbouring height; viz. in the given case from I, Pl. 3. But should not this be practicable, you must, as above observed, rest your defence on the fire of musketry, and post your infantry so far forward on
the

the declivity, that it can defend by its fire the whole space from n to q.

If there are any heights between the principal position and the mouth of the defilé by which the enemy must approach, and if these heights conceal this debouché from the position, and are favourably situated for opposing the enemy in his act of debouchéing and forming, they should be occupied in force, and considered as very important posts.—An example may be seen in the heights F and I of the position of Maxen, Pl. 3 and 4. The debouchéing and forming is often more difficult than the attack itself; and if you allow the enemy to do this without opposition, you are already half defeated.

The most disadvantageous ground for the artillery is, when the declivity of the height on which the battery is placed is arched and steep, and when in front of this height there are many smaller eminences,

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nences, and of course as many hollows, over which the enemy advances.—This was the case in the battle of Maxen.

At first sight, many people would think that the position taken by General Fink at Maxen was a very excellent one, from its great height and apparent strength; but they have only to examine the profiles, viz. Pl. 4. Prof. 2. H E, and Prof. 3. C E, and they will at once see that the enemy could only be touched by the cannon at particular points; and from i to h, and from g to f, he is so completely covered from the cannon-shot, that he may halt and rest.—Further, when he has advanced to e, Prof. 2, and w, Prof. 3, he is entirely under the cannon, and has no more to apprehend from them.

In such a case as this, you must always endeavour to have a flanking battery, which can rake all the hollows, and the feet of the principal heights.—If in the
affair

affair of Maxen they had occupied, and erected a battery on, the height L, Pl. 3, this must have been attacked and carried, previous to the making any attack on the hills C H.

4. "It is often advantageous to mask
"your batteries."

This may be done in different ways, viz. by means of garden-walls*, hedges, planks, bushes, &c. all of which can be easily pulled down or shot away.—You may also conceal your battery by a line of infantry, or, which is better, of cavalry, who can remove quickly when you want to fire.—If you do this, particularly in the part where the enemy attacks, he will, in all probability, when he thinks himself secure from the further fire of your batteries, form into a close column, or at least add more depth and solidity to his attack.

* At the siege of the city of Dresden in 1759, the Austrians erected batteries behind the garden-walls with such silence and expedition, that the Prussians did not perceive it till the walls were thrown down.—*Author.*

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—You let him advance in this manner to within a very good shot, and then the effect of your battery, which opens at once upon him, will be terrible, and the less he expected it, the more confusion will it create.

5. “The artillery must be particularly directed against those places where the enemy marches in column, and where he is obliged to break off and form up again: for instance, against bridges, defilés, &c.—it must also be brought to bear on his flanks.”

This position will appear evident by what has been already said; however, I shall endeavour to prove it still further, and explain it in a more detailed manner.

I shall allow six shots in a minute for a field piece; I well know that you may fire quicker, but as in that case you will not have time to aim, many of the shots will not take place.

Infantry

Infantry can advance 100, or even 120 paces in a minute without running.—If therefore a battalion advances from 200 to 250 paces in line under the cannon fire, it will not receive above 12 or 15 rounds out of each piece, and the most of these will miss, because, the line being in continual motion, it is necessary that the direction of the gun should be changed at every shot. But should this battalion be obliged in advancing to defile over a bridge, or through any pass where it must break off and form up again, it of course will require some minutes more to perform its march, and consequently it will receive above twice as many shots. The fire will also in this case have much greater effect, as the gun will be pointed for a considerable time in the same direction, and as the shot will strike into a greater depth of files.

6. “The artillery must not be too much dispersed, but, on the contrary, it must be formed into strong batteries.”

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The more the artillery is dispersed, the more divided becomes its fire, and the less terrifying and decisive is its effect.—

It is not the mere number of the killed that in general determines the victory, or discourages the combatants. The soldier knows that some must fall, and he has neither time nor inclination to count them. In order to frighten your enemy, and put him to flight, something uncommon must be effected; whole platoons and ranks must be swept off at once. This strikes a sudden terror into the soldier; whichever way he looks, death stares him in the face, and he is no longer to be restrained by his officer. In order to make myself better understood, I will suppose an army of 40,000 men, which in advancing loses 3,000 (this is stating the loss at the highest) by the fire of the artillery, dispersed along the front of the position against which they advance.—This loss, as it falls in a great measure equally upon every regiment, will not terrify the enemy, or check him

him in the least, much less will it create disorder or make openings in the line, of which the cavalry might profit; for the officers will be able to close and complete the files before the soldiers can well perceive that the shot have had any effect. On the other hand, should the artillery be formed into three principal batteries, and each of these batteries kill from 800 to 1000 men in three different parts of the enemy's line, it would require good Generals and brave troops to maintain order, and to ward off a decisive blow from the cavalry.

7. "The cannon must be pointed obliquely, and not perpendicularly to the enemy's front."

Shots that are fired in a perpendicular direction to the enemy's front, cannot possibly kill above three men, and even if they do keep in the right line, it is seldom that they kill above one;—but those that
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are fired in an oblique direction, almost always take place, and often kill four or five men, or more, according to the acute-ness of the angle which they make with the enemy's line.

8. " Is it most advantageous to direct
" the fire of your artillery against the ene-
" my's batteries, or against his troops ?"

I do not presume to determine this point, on which the cleverest artillery-officers have differed ; however, I may be allowed to offer my opinion.

When you consider that the effect of artillery is much more striking than that of small arms, and imposes more terror on the troops, as also that it is not the mere number of the killed which determines the victory, it appears that it is of much more service to dismount a cannon, than to kill 100 or 200 men ; moreover, shots fired against batteries serve two pur-
poses,

poses, viz. of dismounting guns, and killing the artillery-men.—If they miss the former, they generally hit the latter, which in fact is a consideration, as good artillery-men are very valuable, and not easily replaced in a campaign.—An army can keep the field, though it sustains very heavy losses both in cavalry and infantry. The General reinforces himself, either by drawing troops from those garrisons which can spare them, or by calling in detached corps; or, like Marshal Daun after the unfortunate battle of Lissa, he endeavours, by occupying advantageous positions, to gain time enough to receive recruits from the depots, or otherwise, and train them.—Recruits, in general, when delivered to each battalion, may be sufficiently trained in four weeks, but artillery-men require much more time.—It is necessary that these latter should acquire a certain degree of dexterity and readiness in the active part of the business, which, though merely bodily exertion, still requires

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quires great practice, and even then is not within the compass of every one.—There is art in the mere handling of the lever, in which dexterity effects more than strength, and one man who understands it will do more than three who do not; not to mention that the latter will in all probability strain and rupture themselves, and hinder more than assist you.—You must add to this, that an artillery-man ought to have a well-exercised eye, and be able to reflect justly on what he is doing; it therefore takes much time and attention to form him properly. From these considerations it appears evident, that if a General loses a great part of his artillery-men, he must either send away his cannon, or they must be very ill served: in either case he will find it difficult to keep the field.

Notwithstanding what is above observed, the directing your fire against the enemy's batteries is subject to an exception

tion of great moment, viz. if the enemy is advancing to the attack with rapidity and resolution, you must by all means direct your fire against his troops, in order to abate their courage, check them, and, if possible, to put them to flight. Should you, in this case, fire at batteries, and even dismount the guns, this will neither make openings in the attacking troops, nor in the least degree oppose their march. You may therefore establish the following as a general maxim, viz. "That in the attack the fire of your artillery should be directed against the enemy's batteries, and in the defence, against his troops *."

* This appears to be a good general rule for the cannonade which precedes the attack ; but it strikes us, that when the troops *actually advance* to the attack, the artillery that *advances* with them should direct its whole fire, not against the enemy's artillery, but against the troops, which occupy the ground where the attack is made ; and even during the cannonade previous to the attack, if you have an opportunity of enfilading the troops who defend the post that is to be attacked, or otherwise annoying them very much with your fire, we presume there is no doubt that you should employ some of your artillery for that purpose.—*Translators.*

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9. " When

9. "When you fire at troops that are
 "advancing, you should aim short of
 "them, and vice versa when they are re-
 "tiring."

If the enemy is advancing in a column, or in a body of any depth, you should take care not to point your guns at the center or rear of it, for in that case the troops will advance the faster, in order to get out of the line of your fire. On the contrary, if you aim at the front, or rather something short of the front, the balls will bound into the ranks as well as if they were aimed immediately at them, fewer shots will miss *, and the soldier

* Whether more or fewer balls will miss a line by this means, we cannot pretend to determine; however, it appears that any little rising or heap of stones, &c. if the ball strikes on them, may give it a very different direction, or make it bound quite over the troops. Against a column this method of firing seems still more exceptionable, because as the front is small, if the ball when it strikes the ground hits against any hard substance which turns it aside, it may miss the column entirely. How far artillery officers admit these objections, we do not know; they of course must be the best judges.—*Translators.*

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will be intimidated, when he sees that at every step he approaches nearer to his destruction: but when the enemy is put to flight, you must act just vice versa. You must aim rather over him, and when the troops see that the balls not only follow, but overtake them, and rake the ground they are to pass over, their terror and confusion will increase, their flight will be slower, they will disperse more, and you will have an opportunity of taking a greater number of prisoners.

10. " You may ricochet against troops, particularly against cavalry."

It is not customary to practise the ricochet firing against troops, at least I have never seen it done in all my experience, but it might be introduced with great advantage.—A few dozen of cartridges prepared for that purpose cannot incumber the ammunition-waggon, and the effect would be almost incredible. These shots

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would not only be excellent from the certainty of their taking place *, but they would also spread terror and confusion amongst the enemy's troops, much sooner than the common shots.—A single ball striking a platoon or squadron, even if it kills two or three men, creates but little disorder and less fear, as it is only observed by its effect: but balls which the troops perceive striking the ground about 100 or more paces in front of them, and approaching them with short bounds, cause much unsteadiness, waving, pressing, and confusion in the ranks, as every one endeavours to get out of their way.—Ricochet firing has another advantage—Generals who are not sufficiently acquainted with the artillery, often order the artillery officers to fire when the enemy is full 1500 paces distant.—This is an embarrass-

* It is, however, necessary to observe, that in order to ricochet with effect, the ground must be very smooth and even, because, if it is rough, it will often give the balls or shells quite a different direction from that which is intended.

Translators.

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ing situation for an artillery officer; for if he does not fire, he is accused of irresolution; and if he fires without striking the object (which must be the case at such a distance) he is accused of want of skill. But if on such an occasion he ricochets, the General will be satisfied, the shot will strike the enemy, and the battery will of course be the more formidable.

II. "It is advantageous that all cavalry, even the light cavalry, should be furnished with cannon."

I saw the very great advantage that attends the furnishing cavalry with cannon, in the campaigns which I served against the Prussian army.

More than once, when we wished to be beforehand with the enemy in taking possession of a height or post, we have found it already occupied by Prussian troops and cannon; nor could we but suppose, that

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these troops consisted in part of infantry, as they fired at us out of 12 or 18 pounders. Afterwards, when it was too late, we have, by the means of deserters, found out our mistake, and that we had been deceived by a few light cavalry.

In order to facilitate the transporting and manœuvring of this horse or flying artillery, the carriages as well as the guns themselves are made very light, and the balls of the large guns are hollow. The artillery-men are all mounted.—When the roads are bad, or when the guns are to be drawn up a hill, the artillery-men dismount, and yoke on their horses, which are already properly harnessed for that purpose; by these means the march of the artillery is rendered so expeditious, that it can always keep up with the cavalry.

It is undoubtedly a very great point to be beforehand with the enemy in occupying

pying an advantageous post, and to keep him in uncertainty with respect to the strength and species of your troops; however, this institution is attended with another advantage, which is not less important.—Cavalry, if it is not supported by infantry, will not be able to do any thing against cavalry that is furnished with artillery: but these latter will have it in their power to make the most daring incursions, and to execute the most difficult enterprises without any apprehension of danger.

The flying artillery would, if possible, be of still greater use to light infantry, such as croats, free-battalions, &c. I know very well that these have in general cannon with them; but they are either too small, for instance, 3-pounders, or they are too heavy, and badly horsed.

Every thing that is above observed respecting cannon, may be equally applied

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to howitzes, as the service of the one bears so near a resemblance to the other; with the difference only that the effect of the latter, provided they are well served and managed, is superior to that of the former.

The howitz is an excellent piece of ordnance, and may at all times be used with great advantage, but its excellence is more particularly conspicuous in hilly situations; for you can throw the shells out of it into the hollows, and on to the tops of the hills, where the cannon cannot be brought to bear. The shells occasion more confusion, and strike more terror into the troops, than the cannon-balls, for not only their bounding, but also their bursting is formidable.

I have observed that the generality of howitzes, in different armies, are faulty in their construction, and that it is not possible to fire from them with certainty, on
account

account of their nodding or rocking*. I know that there are great improvements making in this respect; however, this is not the place to treat of the improvements in artillery, but merely to explain how it may be most advantageously used, taking it as it is. I shall therefore proceed to deliver my opinion respecting the method of using howitzes.

Against cavalry I would fire the fire-balls †.—These flaming bodies, innocent as they are in fact, have a great effect

* This we suppose is owing to the trunnions being ill placed; that is, too far back.—*Translators.*

† A fire-ball is a sort of shell with three, four, or five fire holes.—It is filled with very combustible matter.—Each of these holes is furnished with a piece of fuze composition.—These fuzes being lighted by the powder with which the piece is loaded, communicate the fire to the combustible composition with which the shell is filled; the shell then throws out a great deal of fire from each of these holes.—In short, they are just shells, which, instead of bursting, lay spitting out fire, and may therefore occasion disorder amongst cavalry if they happen to fall in the squadron.—They are more commonly made use of to set magazines and other buildings on fire.—*Translators.*

upon

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upon cavalry; and I should like to see the squadrons that could stand them.—If they are made so that they will bear the blow, I would ricocher with them, in such a manner that they should bound just before the front, and hop into the squadron.

I consider it as a fixed principle, that you should always ricocher with howitzes.—In the first place, whether you throw the shell (as a shell out of a mortar) or fire it as a shot, the effect is uncertain; and secondly, the shells have twice the effect if they first bound before the front, and are seen by the troops.—They occasion more immediate terror, which is often very decisive against cavalry. The shells fired in this manner are also much more certain of striking the object, especially if you can enfilade with them.

In the seven years war, the Prussians made great use of the howitz shells, particularly

ticularly at the battles of Zornsdorf and Torgau: I was at both, and though I cannot say that they did very great real execution, yet they imposed terror on the troops, and created much confusion. However, I was witness to the decisive effect that they may produce, on the 21st July 1762. A Prussian corps, called the Brigade du Corps, under the command of General Moellendorff, had advanced in the night between Schweidnitz and the debouché of Burkersdorff (which we had occupied and intrenched), in order to cut off entirely our communication with Schweidnitz, of which fortress the Prussians had already begun the siege. At break of day we saw them intrenching themselves, and concluded that it was done merely with an idea of strengthening their post, when we received at once a most terrible shower, particularly of shells, from 12 cannon and 40 howitzes.—I had rode to the spot in order to reconnoitre, and I never remember to have seen so formidable

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dable a fire. It was impossible to restrain the horses of the cavalry, or those of the limbers, and ammunition carriages. They became terrified and unruly to the greatest degree, and even ran quite away : and of one of the dragoon regiments which had not yet mounted, but a very few could manage to get on their horses. The infantry, it is true, displayed extraordinary courage and steadiness, but at last, after having made an obstinate defence, they were dislodged from the redoubts, the debouché, and the abbatis.

Fire-balls are of little use against infantry.—Shells will have much more effect, particularly if they are so managed as to burst in proper time. Ricochet firing may be practised with as much effect against infantry as against cavalry.

Grape-shot fired out of howitzes are excellent both against cavalry and infantry, particularly if the iron balls are not too small.

By

S E C T I O N III. 205

By different trials I have found, that you may fire grape-shot so as to make them strike the ground, and bound into the ranks, in which manner they will do great execution, provided they do not touch the ground till within a very short distance of the enemy's front. I would fire them in this way against an advancing enemy, as it would produce the same effect as before observed respecting round shot.

Howitzes, and particularly the Russian unicorns, are the best adapted to throw shells into redoubts, abbatis, and on to heights; but the greatest attention must be paid to the proper construction of the fuzes, in order that the shells may neither burst in the air, nor too late. It is necessary that shells, thrown into close compact bodies of troops, should burst exactly in time, as in that case they will have great effect.

If

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If you wish to use your howitzes with advantage, you should neither disperse them, nor fire out of them sparingly; but, on the contrary, you should fire out of several at once, as fast as you can, and endeavour to throw a great many shells into a small space.—If you break through the enemy's line in one part, the rest in a manner gives way of itself.

In treating of the advantages to be derived from howitzes, I pass over in silence the consideration, that you may by means of them set fire to a village or town much quicker than in any other manner. No good man will make use of this advantage, unless positively ordered to do so, or obliged by absolute necessity.—For the honour of humanity, these cases are rare.

I shall not venture to write more on the subject of artillery—I might be accused of partiality, being myself an artillery officer. This therefore would be a very
improper

improper place to combat the opinions of Monsieur Guibert, Puget, and others, who reprobate the numerous trains of artillery which are attendant on the armies of the present age, and who wish to see them diminished. Their reasons are very good, particularly with respect to the forage, the marches, and the immense expence; but in the present mode of carrying on war, I would not advise an army to be the first to diminish their train of artillery.—They certainly would not be able to keep the field against an army furnished with a superior artillery, particularly if this latter was in every respect well served.

In the whole of this section I have endeavoured to lay before my readers and explain, merely what other authors have passed over in silence.—The same will be my object in the volumes that I may deliver in future; for, as I observed in my preface, I am determined not to copy from others, or on any account to be the

4 transcriber

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transcriber of their ideas. This method is certainly extremely convenient for the writer, but it is not a very pleasant thing to the reader, particularly to an officer, to buy the same book under ten different titles, and always to find that the new purchase contains nothing more than a repetition of the old one, with perhaps some trifling variations of expression.—I could here mention a dozen very dear works, the authors of which assume a most important mien, to say nothing more or better than Vegetius * and the Chevalier Vallerie † have comprised in a few sheets,

* We have several French and one German translation of this interesting book. The latter was published at Vienna, in 8vo, by Bion, in 1759.—*Author.*

† *Pratique et Maximes de la Guerre*, which appeared in the last century.—*Author.*

SECTION

SECTION IV.

Different PLANS of DEFENCE,

Which might have been adopted at

M A X E N.

Shewing how the Prussian Corps might have defended itself against all Attacks.

Formez vous le Coup d'Oeil sur des signes certains,

Faites un bon emploi des différens terrains :

Ici vous rencontrez des hauteurs escarpées,

Là des Valons, des Champs, ou des terres coupées.

— — — — —
D'eux dépend votre sort quand le combat s'apprête.

L'Art de la Guerre de Main de Maître.

FOR the instruction of young officers,
I shall now unfold and explain, according to the rules of tacticks, the opinions that every connoisseur in the military art must naturally form, upon an exact inspection of the ground in the en-
P viron

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virons of Maxen; which opinions I have heard delivered by many very able officers. It would be a great injustice in any body to accuse me, on this account, of self-conceit or censoriousness: and, on the other hand, it would be unmanly and dishonourable in me, if I were to entertain the most distant idea of condemning General Fink after his death, or of injuring his reputation in the smallest degree. His extensive military knowledge, and his great merits, are sufficiently proved by several well-planned, resolute, and well-executed undertakings, as also by the approbation and esteem of two great Generals, viz. the King of Prussia, and his Royal Highness Prince Henry*.

My

* I know from good authority, that Prince Henry had the most unlimited confidence in him, and his Royal Highness's recommendation was the principal cause of his rapid advancement.—At the battle of Franckfort, in which the Prussians were defeated, General Fink displayed such zeal, knowledge, and capacity in the collecting the troops, forming them again, repairing the disorder, and covering the retreat of the army, that the King told him, he would be a second Turenne.

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My own experience, and the confessions of many studious officers have convinced me, that mere theoretical treatises and didactick works, nay, even manœuvres and plans of operations, unless they be adapted to particular given situations which really exist in nature, convey but little useful information. One campaign will sufficiently prove to any officer the truth of this assertion.—I considered it, therefore, as necessary to elucidate the above given rules for the attack and defence of heights by examples; which immediately applied

renne. The great confidence that was reposed in him by others might possibly make him rely too much on his own abilities, and thus prove the cause of his misfortune. Possibly also it drew upon him envy and hatred. Perhaps he was but little acquainted with the environs of Maxen, and it was extremely difficult to acquire a competent knowledge of them in so short a time, and at a season when the days were short, and the weather very bad. I, and many others, who have in cool blood, and at our leisure, examined the ground, traced out its advantages and disadvantages, projected better positions, &c. we, I say, circumstanced as General Fink was, should not, in all probability, have acted as well as he did.—*Author.*

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to the nature of the ground. It is true I was at liberty to make choice of any situation for this purpose, but had I not chosen one that was so well known, I should have feared that suspicions might arise respecting the accuracy of my plans, or indeed, that it might even have been doubted, whether such a situation existed at all. (The like suspicions were entertained by some people with respect to the intrenched camp near Jauernick, proposed in my Field Engineer.)—In this case, my readers would have lost their confidence in me, and consequently would not have reaped any advantage from my works.

I beg that the following sheets may not be considered as instructions offered by me to formed Generals, or as written with a malicious view of blaming General Fink. I am conscious that my abilities are inadequate to the former, and equally conscious am I that my heart is too good for the latter.—My idea is solely to instruct
the

the inexperienced officer, and I hope that my readers will be convinced of the modesty and purity of my intentions.

THE ravine of Reinhardtsgrimma would have been very difficult to force if it had been properly defended, and if General Fink had taken post behind it. In this case also, a retreat would have been open to him, by Cunnersdorf or Luchau, and Frauendorf, to Pretschendorf and Freyberg.

The King of Prussia observes very justly, in the sixth article of his instructions to his Generals, that you may find out two hundred different positions in the square of five miles.—In my opinion, and as well as I can judge from a thorough knowledge of the ground, there were three very advantageous positions in the small space between Reinhardtsgrimma and Maxen. I will describe and explain them very particularly, according to the

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rules of attack and defence, supposing them to be occupied by the same number of cavalry, infantry, and artillery, that composed General Fink's corps.

The corps therefore consists of

10	squadrons	-	-	hussars.
10	D°	-	-	dragoons.
15	D°	-	-	cuirassiers.
4	battalions	-	-	grenadiers.
13	D°	-	-	musketeers.
1	free battalion			

Total 35 squadrons and 18 battalions.

These are distributed as follows, viz.

1. One hundred volunteers and thirty hussars in the ravine on the right flank, and in the rear of the corps in the wood.

2. One hundred volunteers and two squadrons of hussars along the ravine from Reinhardtsgrimma to the left flank of the corps.

3. One

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3. One free battalion in that part of the ravine where the village of Reinhardtsgrimma is situated, and in the gentleman's house and yard.

4. One grenadier battalion in Reinhardtsgrimma, to support the free battalion, and more particularly to occupy the church-yard.

5. Two battalions of grenadiers on this side of the village, to support the troops in the village, and to oppose the enemy, should he attempt to defile through the ravine.

6. One battalion of grenadiers posted on the road that comes from the village, for the same purpose as the former, and particularly to defend that road.

7. Three battalions in the right wing.

8. One battalion formed in the right flank.

9. Six battalions in the center.

10. Three battalions, four squadrons of dragoons, and five squadrons of cuirassiers, as a reserve in the rear of the center.

P 4

11. Four

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11. Four squadrons of hussars on the right, and four squadrons of hussars on the left, opposite the village, to support the grenadiers, and cover their retreat.

12. Six squadrons of dragoons, and ten squadrons of cuirassiers, on the left wing.

INSTRUCTIONS for all the different Detachments.

THE worst consequences may ensue, if, during an engagement, a detachment of the enemy, let it be ever so small, slips through a ravine or wood, and attacks you in the flank or rear. The nature of the ground possibly prevents your discovering their strength; you magnify their numbers from the apparent intrepidity of their attack; and conclude, that such a daring enterprise could only be executed by a considerable body of troops. It at
once

once strikes both officer and foldier that he is between two fires, and that his retreat is cut off. The foldier loses his courage, and with it all inclination to obey the order of his superior; confusion prevails; and every hope even of a good retreat is lost.—You must not suppose that you are secure from such an attempt, because, as in this instance, the ravine or wood is in your rear, and distant from the enemy.—A distance of many miles is nothing to light troops, and, in a hilly intersected country, it is an easy matter to get quite into the rear of an army.

1. In consequence of these considerations, one hundred volunteers, and thirty hussars are posted in the wood in the rear of the corps, and on the right flank. These are divided into small parties, and stationed at such a distance from each other, that their patrols meet, in order that nothing may approach the army unobserved. The hussars, in particular, must
patrole

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patrole and reconnoitre as far to their front as possible.—I think it would be very proper to employ young officers of ability and knowledge upon this occasion; that is, to reconnoitre.—It would answer two purposes—First; their reports would be more accurate, and more to be depended upon, than those of non-commissioned officers or private men—Secondly; they would form their coup d'œil, and enlarge their ideas of the service.—An officer, when employed in this way, must always have two or three hussars or dragoons with him, to send back with his reports.

As soon as a patrolle or person sent out to reconnoitre discovers any of the enemy, he must immediately fall back upon the next post in his rear, and announce his discovery. Each post, unless it be decidedly too weak to make any resistance, must endeavour to keep the enemy in check as long as possible, in order that it may be reinforced itself, or that the
troops

troops may gain time to prepare themselves. As soon as this post has, either by reconnoitring, or by the means of deserters or prisoners, discovered the enemy's strength and intentions, it must send information of the same to the reserve by an intelligent man.—The officer commanding the reserve, must immediately send a detachment superior in numbers, and composed relatively to the species of the enemy's troops, with directions to attack the enemy and drive him back at all events. You must take care, however, not to allow the enemy to approach too near on this side, for an affair so close in the rear of the army would be apt to confuse or intimidate the rest of your troops.

2. The 100 volunteers and 2 squadrons on the left flank must also be divided into small parties. The volunteers must be posted in the ravine, extending quite into the rear of the army, and the hussars must
patrole

patrole as far as possible beyond the ravine. As the enemy cannot approach on this side without their discovering him, nor conceal his strength, they must immediately report to the cavalry of the left wing, if he advances in such force that they are not able to keep him in check. If the enemy endeavours to force through in any particular part, all the parties must unite on that spot, and make every opposition in their power; should they, however, be forced to give way, they must retreat towards the left flank by a movement to the left, in order to leave the ground clear for the cavalry and artillery to act, and they must form on, or in the rear of, the flanks of the cavalry of the left wing.

Should the enemy's infantry (which however is not very probable) endeavour to force through the ravine, N° 2, the grenadier battalion of the left wing, N° 5, must advance against them, and maintain
its

its ground till the reserve, or a battalion from N° 7 (if nothing is to be apprehended in that quarter) can hasten to its assistance. The cavalry, however, in N° 12, could best receive an enemy who should attempt to penetrate on this side, and it could charge and rout him before he would have time to form.

3. The free battalion in the ravine and village, must post itself in the court-yard of the gentleman's house, which has a moat round it, and behind the strongest of the walls, and in the hollow ways. It must endeavour to dispute the passage with the enemy foot for foot, and to check him as much as possible, particularly if the object is to gain time, as was the case with General Fink; for, if he could have held out twenty-four hours, he would have been relieved by General Hulsén. If this battalion is obliged to give way, it must retreat along the ravine to the right and left, and get on the flanks or into the rear.

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rear of the corps, in order that it may not hinder the batteries from firing, by coming into the line of their fire.

4. A grenadier battalion.—Some hundred men of this battalion must be posted in the church-yard, which is situated upon the hill, and is close to the road just at the entrance of the village.

If, as in the present case, the object is to gain time, this post must be sacrificed to the welfare of the whole. The officer therefore who commands it, must receive the most positive orders not to abandon it on pain of death; but either to defend himself to the last man, or, if he finds it impossible to maintain it any longer, to protract the time as much as he can, in making conditions with the enemy before he surrenders. The remaining part of this grenadier battalion must occupy, on that side of the village next to the army, all the outlets and adjoining houses which

are capable of defence. In this manner it supports the free battalion; and if it is forced, it must fall back on the other grenadier battalions.

5. The two grenadier battalions on this side of Reinhardtsgrimma, must support the troops posted in the village in the most determined manner; they must endeavour by all possible means to prevent the enemy from debouchéing through the village and ravine; they must attack him most vigorously in his attempts to form: but if they are obliged to give way, they must move off to the left flank of the army, and post themselves so as to protect the batteries on the left flank of the dragoons.

If the enemy should make his attack in an oblique order of battle, or in columns on the left wing, with a view to rout the cavalry, and gain the left flank, these grenadier battalions will be reinforced by some battalions of the reserve, or of the
right

right wing, in order to oppose the enemy in this movement.—The right wing also will advance as much as it can, without exposing its flank to batteries that may be erected on the height on the other side of the village, and it will endeavour to attack the enemy in flank. When such hardy manœuvres are executed with determination and quickness, they seldom fail of producing the desired effect.

6. A grenadier battalion posted on the road that leads from the village to the wood.—This battalion is placed in this position with the same intent as the other grenadier battalions, and its particular care must be to defend the road, and to oppose the enemy's approach on this side.—It must not give way on any account; and it will be supported by the three battalions of the right wing, as well as by the infantry and cavalry of the reserve.—It must post itself at first close to the village, in order the better to defend by its fire that
debouché

debouché and the ravine ; but if it is too much pressed, and if the enemy is forcing through the village on all sides, so as to threaten its flanks, it must retreat to the small height, where I have marked it in the plan, from whence it must not stir till the rest of the army has moved off.—In case of a retreat it forms part of the rear guard.

7. Three battalions on the small heights of the right wing of the position.—As these battalions have a ravine of considerable depth in their front, they are adequate to the defence of the whole of the extent which is allotted to them.—They must at first post themselves close to the edge of the ravine, in order more immediately to oppose the enemy in his attempt to pass it ; but should they be too much galled by the cannon which the enemy may plant on the other side of the ravine, they must retire to the position in which they are represented in the plan.

Q

8. One

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8. One battalion in the right flank, on the road that comes up from the Hirschbach mill.—This battalion must defend this debouché to the last, and it will be supported by the right battalion of the line, and by the reserve, in case of necessity.

It is not probable that the enemy would make an attack on this right wing and flank, as the ground is very difficult, and he could only approach in columns. Should he, however, do it, and oblige this wing to give way, whilst the left wing remained firm, and maintained its ground, it must in this case fall back upon the left wing, and form a potence to the right flank of it.—The infantry of the reserve must at the same time front towards the wood, and the cavalry of it must post itself in the rear of the infantry. The posts in the wood must be reinforced as much as possible.

9. Six

9. Six battalions in the center and on the height.—As this height forms a continued and gradual slope, it is very excellent for the fire of artillery and infantry, which will completely sweep the whole face of it. It is evident, therefore, if this part of the army does its duty, that it cannot well be forced till the wings are routed. The reserve must support it to the utmost; but should it be no longer able to maintain its ground, the whole army retreats with it.

10. Three battalions of infantry, four squadrons of dragoons, and five squadrons of cuirassiers, in reserve.

The destination of this reserve is, to support and reinforce, as occasion may require, all posts in general, and the principal post in particular.—The officer, to whom the command of the reserve is assigned, must be a man of known abilities and resolution.—Each post must have

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some intelligent hussars and dragoons to send with reports. When any post, that can be supported from the reserve, sends to the commanding officer of it desiring assistance, he must detach for this purpose some companies and squadrons, or at most a complete battalion, as occasion may require. As soon as these troops have repulsed the enemy, they must not pursue him, but must immediately return to their former post. The commanding officer always remains with the greatest part of the reserve to support the principal corps.

The reserve must be composed of the battalions which are most famous for their discipline and bravery.—They must not lose time in firing, but as they advance they must at once charge the attacking enemy with the utmost impetuosity, the infantry using the bayonet, and the cavalry the sword, by which vigorous way of acting they will probably drive him back.—In these decisive moments every thing

thing depends on resolution, and quickness in execution.

In case of a retreat the reserve forms the rear guard.

II. Eight squadrons of hussars near the village.

These support the grenadiers, and cover their retreat if they are forced.—These squadrons must attack any of the enemy's troops, which attempt to deboucher thro' Reinhardtsgrimma, before they have time to form; they must break in upon them with the utmost impetuosity, and drive them back into the ravine.—These and the grenadiers must support each other reciprocally, and not abandon each other on pain of suffering every disgrace and punishment that can be inflicted; and, when they can no longer maintain their ground, they must retreat together. All this may be required from the Prussian hussars, who

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are used to attack in close order, that is, with well-closed ranks and files; but in armies, where the hussars are only used to fight *à la débandade*, it would be necessary to post dragoons in 11.

12. Six squadrons of dragoons, and ten squadrons of cuirassiers, on the left wing.

As these have a perfect plain to act upon, both in their own front, and in front of the infantry, and as they form a re-entrant angle with the latter, they have an excellent opportunity of displaying their courage, rapidity, and readiness in manœuvring. — They must not on any account wait for the attack; but advance against the enemy, and endeavour to rout him by a vigorous charge. — The firing with carbines and pistols must be positively forbid. Should they be repulsed, they must by no means fall back on the infantry, as by doing this they would throw it into the utmost confusion, and occasion the

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the general defeat of the whole corps. The infantry, therefore, has orders to fire upon them if they should make such an attempt.—In case of a repulse, they must retreat to their first position; and, to the end that the whole may not be risked at once, but that there may always be a reserve to cover the retreat and check the enemy, the attacks must be made in echecquier, or in a kind of echelon by regiments.

If the enemy does not advance against this cavalry, but confines his attack merely to the infantry, they must endeavour to fall on his right flank. Should, however, the principal part of them be kept in check by the enemy's troops, still some squadrons must endeavour to act offensively on the flank of his attack, or otherwise, as opportunities may offer.

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DISTRIBUTION of the ARTILLERY.

It consists of 25 - 3 pounders

2 - 4 D°

18 - 6 D°

17 - 12 D°

9 - - howitzes

71 pieces of artillery,

Divided as follows.

N° of the Posts.	3 lb.	4 lb.	6 lb.	12 lb.	Howitzes,
4 and 5	6	—	2	—	2
6	2	—	—	—	1
7	3	—	—	—	—
8	2	—	—	—	—
9	12	—	—	—	—
10	—	2	2	2	—
13	—	—	2	2	—
14	—	—	4	3	2
15	—	—	4	4	2
16	—	—	4	6	2
Total	25	2	18	17	9

The

The post N° 16 seems not to be supported by infantry; but it has the three grenadier battalions in its front, and these, if the enemy forces through the village, retreat and form on the left of the battery, which protects it sufficiently.—This battery rakes the whole ground in front of the infantry, and if it is well served it must do very great execution.

The batteries 14, 15, and 16, cross and flank each other, and, if you take the trouble of drawing the shot-lines from the batteries, you will find that every spot of ground in the front is completely defended by the fire.—This position is particularly advantageous, for the following important reasons,

1. The cavalry and infantry can be employed with advantage, according to their different species, and they have free room to manœuvre, and support each other,

2. The

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2. The artillery planted upon these gentle and gradual ascents can sweep the whole front of the position, and display its force in a most formidable manner.

3. The enemy cannot move on with an extended front, but must advance in columns, and when he has succeeded in forcing through the ravine and village, he must form under the fire of your artillery.

4. The corps is not surrounded or enclosed in its rear, but has two retreats in case it is forced from its position, viz. (as may be seen in the plan) towards Maxen in three, and towards Cunnersdorf or Luchau in four columns. In either of these retreats it may take advantageous positions, or in the last-mentioned it may continue to retire by Glasshutte or Pretschendorf, and from thence to Freyberg.

If,

If, however, you have reason to apprehend any offensive movements from the side of Maxen or Lungewitz (which was the case with General Fink's corps, as General Brentano advanced from the neighbourhood of Seyda and Rohrsdorf), in that case, I say, this position would be liable to a very great objection; viz. if the enemy forced through the Reinhardtsgrimma wood, the corps would be in a similar situation to the Austrians at the battle of Torgau*; between two fires, and too much confined as to ground to be able to manœuvre and exert themselves in their defence †.

I should

* With this essential difference, that the Austrians, although attacked in front and rear, had still ground enough left within their position to manœuvre upon.—*Translators.*

† This position appears to be advisable only upon the supposition that the enemy made but one attack, viz. from Reinhardtsgrimma. If General Fink had occupied it, there was no possibility of a retreat for him; for General Brentano would certainly have taken possession of the ground behind the wood; he might also have detached a corps to form behind the ravine which the roads, u, v, w, cross, and by this means have

cut

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I should therefore prefer the following position.

SECOND POSITION, near Reinhardtsgrimma.

- a. 50 hussars } on the right.
100 volunteers }
- b. 50 hussars } on the left flank.
100 volunteers }
- c. 1 free battalion in the ravine and village.
- d. 1 grenadier battalion to support the former, and to occupy the church-yard.
- e. 3 grenadier battalions on this side of the village.
- f. 5 battalions of musketeers in the right,

cut off the retreat entirely. Indeed Captain Tielke does not recommend this or the second position as proper for General Fink, situated as he was; but merely shews, for the sake of instruction, the best way of disposing of your troops in case you did occupy them.—*Translators.*

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- g. 5 battalions of musketeers in the left wing.
- h. 3 battalions in reserve.
- i. 10 squadrons of huffars advanced in the front.
- k. 3 - D° - dragoons } on the
2 - D° - cuiraffiers } right.
- l. 3 - D° - dragoons } on the left
3 - D° - cuiraffiers } flank.
- m. 4 - D° - dragoons } in the
10 - D° - cuiraffiers } center.

DISTRIBUTION of the ARTILLERY.

Posts.		3lb.	4lb.	6lb.	12lb.	Howitzes.
d and e.	-	9	—	2	—	3
f.	-	6	—	—	—	—
g.	-	6	—	—	—	—
h.	-	4	2	—	—	—
n.	-	—	—	6	6	3
o.	-	—	—	4	5	—
p.	-	—	—	6	6	3
Total	-	25	2	18	17	9

INSTRUC-

INSTRUCTIONS for these POSTS.

- | | | |
|----|-------------------|------------------------------|
| a. | The same as N° 1. | } in the former
position. |
| b. | D° N° 2. | |
| c. | D° N° 3. | |

d. The same as N° 4, in the former position. Whatever part of it may be forced from its post, must retreat to the left wing and form in the left flank.

e. The same as N° 5, in the former position.—In case they are forced, two of them retreat to the right, and one to the left, and form on the flanks of the corps, or in the rear of the flanks as a reserve.

f. 5 battalions which compose the right.

g. 5 D°, which compose the left wing.

These wings form a re-entrant angle, and flank each other.

I do not suppose that an enemy would be rash enough to advance at once against

I

this

this infantry, and expose himself to the cross fire of the batteries n, o, and p : I have, therefore, placed the cavalry in the center of the position. The ground is too much confined for an attack on the flanks, besides, they are too well appuye'd to apprehend any danger.

It is true, it would be possible to make an attack upon the right wing in columns ; but what a terrible fire would the enemy be exposed to from the battery n, and the two batteries which flank it, viz. o and p ! In order to be convinced of this, you need only draw the shot-lines from the different batteries.—In case of such an attack, the battalions of the reserve must move off to the right, and post themselves in the rear of, and support the two grenadier battalions, which will have retreated from e to the right flank.

An attack upon the left wing is much more difficult, for the following reasons :
—The

—The batteries o and n rake the whole of the ground in its front: and the cavalry can protect it better than the right wing, because the ground is more even and open, and of course more adapted to cavalry movements. — The height x, however, which is on the other side of the ravine opposite to the left flank, might prove very disadvantageous to this position, if the enemy should erect upon it a battery of heavy artillery, and enfilade the left wing. Should this happen, or should the enemy turn the left flank on the other side of the ravine, the left wing must wheel back about a quarter of the circle, viz. to q, and the cavalry, l, must post itself in r.— If the enemy should still turn this flank, and endeavour to get into the rear of the corps, this wing must wheel further back to S, and appuyer its flank to the very strong height which is marked in the plan. A strong battery must be formed on the top of this height, and the wood must be lined with light infantry.—

It

It is not possible for the enemy to turn the flank any further.—I think this is as much as can be required from a good position ; but as no fortress is invincible, much less can it be expected that a position should be so.

Nothing is impossible, nothing is difficult to brave troops and an enterprising, resolute General, who has it in his power to risk every thing, and acts up to that power.—This, however, can hardly be the case with any but the reigning Prince himself, who is not answerable to any person for his conduct. You must, therefore, when you occupy a position, or make an attack, or, in short, embark in any undertaking, consider, that it is possible you may be unsuccessful and obliged to retreat, consequently you should plan your retreat beforehand, and take proper measures for securing it.

R

In

In case the troops can no longer maintain this position, the retreat must be performed in four columns to Cunnerdorf. And, should the corps be prevented from pursuing its route further by Luchau and Pretschendorf to Freyberg, it will find more than one good position between Cunnerdorf and Glasshütte; as the ravine in which the Muglitz stream flows is formed by rocks that are extremely steep, and in most places totally inaccessible.— From the field of battle to the last-mentioned village, the ground is very favourable for a retreating corps, and the enemy can neither get round it, nor annoy it with cannon from any neighbouring height.

The four columns move off by the roads t, u, v, w, which are all very good.

The first column of infantry takes the route t; it marches off from the *left by files,*

*files**, and keeps so well closed, and in such order, that at the words Halt! Front! it can immediately face to the flank, and make head against the enemy.—The second column on the route u, is composed of cavalry, and it must support the infantry, wherever the ground will permit it.

The column on the road v is composed of infantry, and the fourth on the road w is the baggage.—The artillery is divided between the battalions, and marches on the left of the columns wherever the ground permits it.—One grenadier battalion is in the front of the first column, and the other three, with the free battalion, form the rear guard of the first, second, third, and fourth columns.

* It appears to us that the movement by *files* is a very bad one, and that it should never be adopted, unless the road is so narrow as not to admit a larger front; however, troops should be trained to perform it with accuracy, as they may sometimes be obliged to make use of it. When Prince Henry of Prussia entered Bohemia in 1778 by the difficult defiles in the neighbourhood of Romburg and Gorgenthal, the cavalry was obliged to perform some marches by files.

Translators.

As soon as the columns approach Cunnerdorf, the grenadiers, the infantry and cavalry must extend and form across the principal road, so that the left wing is appuyed to the end of the village, and they must keep the enemy in check by a brisk and uninterrupted fire, till the heavy artillery and baggage have passed Cunnerdorf, and the former is planted on the first heights on the other side of it. The corps then retreats by the seven roads that lead through the village; the grenadiers forming the rear guard; and these latter must be protected by the fire from the cannon, which will be already unlimbered and planted on the heights abovementioned.

THIRD POSITION.

IN case it is absolutely necessary that the corps should be stationed at Maxen, in order to be nearer to the Elbe and the town of Dohna, as also to be more immediately in the rear of the Austrian camp
of

of Plauen, you might take the following position.

In the Profiles 2 and 3. Pl. 4, it appears, that the hills I and F are some little higher than C and H, and the summits of them are more spacious : moreover, they conceal so completely the debouché of the Reinhardsgrimma wood from the latter, that it cannot be seen, much less defended, from C and H. Now, if the enemy forces this debouché, and forms in front of it, and on the heights I and F, the troops in C and H cannot possibly maintain their post, and they must be beaten in spite of the most heroick valour, even should they not be taken in flank and rear, as the Prussians were by the movements of General Brentano's corps and the army of the Empire.—You must, therefore, endeavour by all possible means to prevent the enemy from debouchéing out of the Reinhardsgrimma wood, and forming as abovementioned. To this end you must

R 3

occupy

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occupy in force the heights I and F; and if you suppose (as happened in the Affair of Maxen) that a corps of the enemy will approach from Wittgendorf and Dohna, you must also occupy the heights C and H, thus forming a sort of square, of which one flank is formed by the Lungwitz, the other by the Muglitz ravine.

You may post the Troops and Artillery as follows :

1. Half a free battalion, with fifty hussars, in the ravine A.
2. The other half, with fifty hussars, in the ravine B.
3. Two hundred infantry, } in the Rein-
and two squadrons of } hardsgrim-
hussars } ma wood.
4. Two grenadier battalions in front of the wood O.
5. One grenadier battalion on the height called the Spitz-berg, or Spitzhill, P.
6. One grenadier battalion in Q.
7. Eight

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7. Eight battalions on C and H.
8. Two battalions in F.
9. Two - D° - in I.
10. One battalion in L.
11. Four squadrons of huffars in S.
12. Three - D° - of dragoons in U.
13. Three - D° - of dragoons in V.
14. Four - D° - of dragoons in T.
15. Fifteen D° - cuirassiers, and four squadrons of huffars, in R.

DISTRIBUTION of the ARTILLERY.

	3lb.	4lb.	6lb.	12lb.	Howitzes.
In P.	- 2	—	—	—	—
Q.	- 2	—	—	—	—
N.	- —	—	2	1	—
C.	- 5	—	5	5	3
H.	- 6	—	6	6	3
L.	- 2	—	1	1	—
I.	- 2	—	2	2	1
O.	- 2	2	—	—	—
F.	- —	—	2	2	2
f.	- 4	—	—	—	—
Total	- 25	2	18	17	9

R 4

INSTRUC-

INSTRUCTIONS for the different POSTS.

1. THE half of the free battalion and the fifty hussars in A, patrol to the Teufel's mill in G, and they examine not only the principal ravine, but also all the smaller ravines, roads, &c. that go out of it, in order that none of the enemy may approach unobserved.—If they discover any of the enemy's parties, and are not strong enough to drive them back, they must at least endeavour to keep them in check till a reinforcement arrives; and they must immediately announce their discovery to the next post, and also to the commanding General.

2. Those in B act in the same manner, and patrol not only in the Muglitz, but also in the Maxen ravine to M.

3. The

3. The two hundred infantry and two squadrons of huffars in the Reinhardfgrimma wood, take care that none of the enemy approach unobserved on this side.—Their patrols extend to the Teufel's mill and to a.—If the enemy forces this wood, they endeavour to oppose his advancing as much as possible, by harraffing the columns in their march *.—They retreat towards the grenadiers and cuirassiers, by moving to the flanks in such a manner as neither to come in the way of these troops, who will be advancing to the attack, nor to get into the line of the fire of the batteries F and I †.

4. Should

* It is true, this could be best and most easily effected by making abbatis across the roads. The pioneers of the different regiments could make all the roads and passes nearly impassable in the course of a few hours; but as I intend to treat of all sorts of Field Fortification, and the complete use of the shovel, pick-ax, &c. in the following volumes of my Work, I have confined myself in this merely to the exposition of the natural advantages of the situation, and have therefore introduced no abbatis, notwithstanding the great use they would be of in the defence of the wood and ravines.—*Author.*

† It strikes us, that it would have been worth while to have

4. Should the enemy, notwithstanding the crossed fire of the batteries, deboucher out of the wood, the two grenadier battalions in Q must advance against him before he can completely effect his formation, charge him with their bayonets, and endeavour to drive him back; but they must not advance immediately on his débouchéing, as they would in that case stop the fire from the batteries I and F, by getting into the line of it.—The cavalry in R and T must support them in this attack.—If the grenadiers are repulsed, they

have thrown a greater force into the Reinhardtsgrimma wood than the author here proposes.—If General Fink had made a good abbatis across the wood (which he had time to do) and defended it strongly with infantry, and some cannon to fire upon the enemy as he advanced from Reinhardtsgrimma, the Austrians could not have forced it without great loss of men and time; and, even if they had succeeded, those Prussians who defended the abbatis might have retired and formed again on the heights behind the wood, which heights would of course have been previously occupied with infantry and artillery, supported by cavalry, as the author mentions. In this case the enemy, after forcing the wood with great loss, would still have had all the difficulties to encounter in coming out of it, which Captain Tielke describes.—*Translators.*

must retreat to I, because this height must be defended to the last, as it is of the utmost consequence in keeping open and covering the retreat of the army.

5. A grenadier battalion on the Spitz-hill in P.—This battalion endeavours to oppose the enemy on that side, and to protect the left flank of the position, which it can easily do, as the ground is very advantageous. It is supported by four squadrons of hussars in S, and should it be forced, it retreats to N, where it must absolutely maintain its ground.

6. The grenadier battalion in Q, endeavours to oppose any of the enemy who may advance in that quarter. But, should the enemy bring cannon upon the opposite height, or attempt to cut off this battalion by throwing troops between it and the heights of Maxen, it must in either of these cases retreat to the left flank of the infantry, and post itself so as to cover
and

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and protect this flank, in conjunction with the battalion in N.

7. Eight battalions of musketeers in C and H.—In case of a serious attack from the side of Maxen, the post of these troops becomes extremely important and difficult.—The opposite height, called the Schaar, is certainly something lower than those of Maxen; however, it is not so much so as to destroy the effect of the fire of the artillery which may be planted on it.—The setting Maxen on fire would incommode the enemy, but not entirely check him, and if the wind should blow from the village towards the heights, this might possibly prove extremely disadvantageous, as the smoke would conceal, and of course facilitate the enemy's movements.

The cavalry can assist but little in the defence on this side, as the heights are too steep, and the ground in general too uneven.

even.—It is, therefore, necessary that the infantry and artillery should display their whole force and bravery.—They must not lose an inch of ground, but, on the contrary, when the enemy has advanced through Maxen to the foot of the heights C and H, they must meet him half way on the face of the hill, and with well-closed ranks and files they must charge him, and drive him back into the village. In this attack the two grenadier battalions in N, and the hussars in S, endeavour to take the enemy in flank, and the dragoons posted in U must advance to support them. If the enemy is repulsed, the infantry must not pursue him through the village, as in that case they would be separated and thrown into confusion, but they must leave the pursuit to the hussars, the dragoons, and the grenadier battalion that was posted in Q; the rest must immediately retire to their former position in C and H.

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8. The two battalions in F are intended as a support to the cavalry, and as a protection to the battery. The cannon must be so far advanced on the declivity, that the fire may rake the whole face of the hill, and particularly the hollow way. If the time permits, the earth may be dug away in the rear of the guns, by which means you make a kind of platform for them, and consequently you are enabled to bring them very forward, without any apprehension of their running down the hill.

If the infantry can be relied upon, I would advise the advancing down hill against the enemy, and the approaching the hollow way f within 150 paces, in order the more immediately to oppose the troops in their attempt to pass it.—During this, however, the cavalry must absolutely defend the ground between the wood and the end of the hollow way, as otherwise the enemy's troops might get round the latter, and either attack the infantry in flank,

flank, or possibly, before these could retire, they might ascend the height, and make themselves masters of the battery. The enemy could not force this post without great loss, as almost the whole face of the hill is raked by the fire from the battery and the infantry: but even if he should succeed in this attack, all is not yet lost, as this height is entirely separated from the rest of the position by a deep valley, in which the village of Hauffdorf is situated. I would, however, in this case advise a retreat.—If the enemy ascends the hill F, it is impossible to save the artillery; but the infantry must retreat as well as it can, by the different roads that lead through Hauffdorf, and post itself again in E.

9. The post I, occupied by two battalions, is the key to the whole position, and particularly adapted to protect the retreat; it must therefore be defended to the last.—This height is extremely favourable

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able for the artillery, owing to its gradual and even descent, which, added to the troops destined for its defence, viz. the two battalions already posted on it, and the two grenadier battalions in O, supported by the cavalry in T and R, will render it very difficult to force; indeed, unless the 19 squadrons in R are entirely defeated, an attack upon the post I is almost impracticable, as the enemy in advancing must expose both his left flank and rear to them.—It is by no means an easy matter to defeat this cavalry; for, how strong, how daring, and how enterprising must not an enemy be, who will endeavour, without the support of artillery, to force through a thick wood, to deboucher and form under the cross fire of heavy batteries, and in face of 19 squadrons, and advance to attack these latter! —But the bringing the artillery through the wood, and unlimbering the guns under the above-mentioned circumstances, would be attended with still greater difficulty;

culty; not to mention the evident disadvantage with which you fire against batteries that so completely command yours. —Should it, however, happen that this infantry is too much pressed by a superior and determined enemy, it must be reinforced by the battalion in L; and if the danger is not too great on the side of Maxen, it must also be supported by some battalions from C H; for, if the post I is forced, every thing is lost,

10. A battalion in L.—This is considered as a reserve destined to cover the retreat of the troops posted in N, C, H, if they should be defeated; and in this case it must be reinforced by one or two other battalions. This post also defends, particularly with its heavy artillery, the hollow between I and C. In a case of absolute necessity, but only in such a case, it reinforces and supports the post I; and, should any part of this battalion be obliged to move on such an occasion, it immediately

S

returns

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returns to its original position in L, when its presence is no longer requisite in I.

11. Four squadrons of hussars in S.—These endeavour to incommode and oppose the enemy as much as possible in his advancing; they support the grenadiers in P and Q, and pursue the enemy if he is repulsed. If they suffer so much from the fire as not to be able to keep their ground, they must fall back to the dragoons in U.

12. Four squadrons of dragoons in U.—These, as well as the rest of the cavalry, are posted in a hollow, and covered from the enemy's fire. It must be a fixed principle, as I have before observed, never to expose cavalry to the cannon fire when it can be avoided. It is sacrificing them to no purpose; besides, it discourages them, and when they are once intimidated, they are not so easily restrained and kept in order, as infantry.—These dragoons support the hussars and grenadiers, pursue the enemy
if

if he is repulsed, and assist in covering the retreat of the infantry.

13. The three squadrons of dragoons in V, are destined for the same service as those in U; and they must take particular care that no part of the enemy's cavalry gets round the post L, or, by gliding along the hollow, takes any of the other posts in the rear.

14. The four squadrons of dragoons in T support the grenadiers in O, oppose the enemy in his debouchéing out of the Reinhardtgrimma wood, and prevent him from turning the left flank of the post I.

15. Four squadrons of hussars and fifteen squadrons of cuirassiers in R.—I have assigned this post to all the cuirassiers, because it is the only ground in the whole situation that is properly adapted to their movements, and they can certainly act here with great advantage, being covered

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from the enemy's artillery, and having room to extend and manœuvre freely, close in front of the wood*. The destination of this cavalry is to oppose the enemy's debouchéing out of the wood and formation, by all possible means; and this is certainly not requiring too much of them, when you consider that they are supported by the fire from two strong batteries, and by two battalions of grenadiers; they have also ground enough to act upon, and to rally under the protection of the above-mentioned batteries in case of a repulse, which, however, is not probable, if they do their duty.—If the cavalry in R can no longer maintain their ground, they must not retreat straight up the hill to F, as in that case they might be thrown into great difficulty by the enemy's pursuing them to the hollow way; but they must retire

* The two heights which appear in this spot are rather too strongly marked both in plans 2, and 3; but it is difficult to avoid a small mistake of this sort in plans where there is so much etching.—*Author and Translators.*

along

along the edge of the wood, get round the end of the hollow way, and ascend the height on that side. They must remain in the bottom as long as possible; but should they be absolutely forced to give way by the superiority of the enemy's numbers, they must move off to the summit of the height F, where they will have room to manœuvre. There they act in conjunction with the infantry, and they support each other reciprocally. They must endeavour to keep possession of this height as long as possible, for if they quit it, their only retreat, viz. through Hauffdorf, is extremely difficult and dangerous, and the ground does not admit of their acting on the other side of the ravine.—The four squadrons of hussars, which are added to the fifteen squadrons of cuirassiers, will, owing to the activity of their horses, be of great use to the latter in manœuvring, and particularly so, if they are obliged to retire up the hill.

THE RETREAT.

THE retreat from this is not so easy and safe, as from the preceding position, in the supposition that the enemy attacks upon both sides. It can only be performed in two columns, on the roads X and Y, to Schlottwitz, and from thence to Cunnerdorf and Glasshutte.—The greatest part of the artillery would be lost, for the hills C, H, and I, are not only steep, but they have, as represented in the profiles, many ridges and shelvings, over which it would be very difficult to draw the cannon with the requisite expedition; moreover, the roads X and Y are by no means good*.—The height

* This, and indeed every other retreat from this position, would have been extremely difficult and dangerous, if not altogether impracticable. It is a general and well-known principle, not to occupy any position near the enemy without foreseeing the means of a retreat from it in case of necessity. It strikes us, however, that the situation of General Fink was
an

height I defends these two roads: this post, therefore, must be maintained to the last, cost what it will.

As soon as the enemy has made himself master of one of the principal heights, viz. either F, or C H, the corps must immediately begin the retreat; for if they wait till both these posts are forced, it will then, in all probability, be impossible to make a retreat with any kind of order.

If the enemy carries the post F, one or two battalions, with some pieces of cannon, will be immediately detached from C H to E, and the two grenadier battalions from

an exception to this general rule. If he held out a day, it was all that was requisite in order to drive the Austrians into Bohemia, and thus happily to execute the great project formed by the King of Prussia.—Therefore he should have occupied the strong ground between Maxen and Reinhardtsgrimma, and have made all preparations for a vigorous defence, but never have thought of retreating; for the latter attempt, supposing him to be attacked from the Maxen, as well as the Reinhardtsgrimma side, would most probably have terminated in the total destruction of his corps.—*Translators.*

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P and Q, will form in the vacancies which this detachment occasions in the line. The retreating troops from F will collect and form again in E, and they will unite with the battalions already posted there to oppose the enemy in his attempt to pass the ravine of Hauffdorf; in which opposition they will be assisted and supported by the batteries I and L.—In the mean time, as much of the artillery as can well be spared, particularly the heavy cannon, must be sent off on the road X.—But it would be absurd and ridiculous to the highest degree to send off artillery from any part of the position where it can be of the least use in checking the enemy, and covering and facilitating the retreat. Every General must certainly set a greater value upon experienced officers and brave troops, than upon cannon, and consequently he must, if necessary, sacrifice the latter to the preservation of the former.—
Two battalions of the right wing join the
post

S E C T I O N I V. 265

post L, in order to co-operate with those at E, in covering the retreat of the corps.

The whole of the cavalry in R and T, retreat also on the road X.—They must move off in as brisk a trot as possible, in order to make room for the infantry, as also that they may, with all expedition, get clear of the ravine which commences at T, and extends to Schlottwitz, where the roads X and Y join, and be beforehand with the enemy in occupying the heights in front of the wood between Schlottwitz and Cunnerdorf.

When this cavalry has moved off, the rest of the battalions and squadrons in N, C, and H, go to the right about, and march at a brisk pace down the heights, making front to the enemy if he comes too near. They retreat between I and L, and gain the road Y. The batteries E, L, and I, must cover this movement by their fire. As soon as these troops
have

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have entered the defilé, the post E retreats on the road X, and then the post L retires on the road Y, and the post I on the road X, these two latter forming the rear guards of both columns.

If the troops posted in C and H are forced the first, they must retreat between I and L to the road Y, and their movement will be covered by the fire of the batteries L, I, and F. In this case the troops in P, Q, S, V, and U, make the rear guard of this column.—At the same time, the whole of the cavalry in R and T move off on the road X as above directed. The battalions in F follow this cavalry, with some of their lightest cannon, but some pieces of heavy cannon remain in F, and fire on the enemy as long as they can. When the enemy is on the point of taking this battery, the artillery-men must either spike the guns, or roll them down the hill into the ravine, and endeavour themselves to escape to the post I.

The

SECTION IV. 267

The two grenadier battalions in O, join those in I, they cover the retreat of the infantry of this post, and of as much of the artillery as can be saved, and they form the rear guard on the road X.

As this corps, whilst it is marching through the wood, can neither form nor defend itself, the troops must move on in the retreat as quick as possible, without making the least halt, and they must leave behind every thing that may retard their march, in order that they may gain expeditiously the heights beyond Cunnerfdorf. The passes of this village and wood must be occupied by the first battalions and cannon that arrive, and a new position must be taken either there or at Glasshutte, as the ground is in both places very favourable. It is of course understood that all the ground between Maxen and Cunnerfdorf must be previously reconnoitred by clever officers, and the roads repaired where they want it.

I hope

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I hope I shall not be condemned because I justify the abandoning artillery upon particular occasions. I consider the great blame, which is often incurred by the loss of a few cannon, as the effect of a very hurtful prejudice. If the artillery has done its part in annoying and checking the enemy, if it has gained time to the retreating corps, and saved the lives and liberty of our troops, the loss of a part of it is not to be looked on either as a disadvantage or a disgrace.—The surest way of not losing artillery is certainly to retire it quicker than the enemy can advance. But is this consistent with your reputation? Is it consistent with the real use of artillery? or does it promote the interest of your cause?

END OF THE FIRST VOLUME.

AMEND-

A M E N D M E N T S

T O

V O L U M E I.

Page 2.

THE corps that marched under the command of General Hulsen, from Silesia to Saxony, consisted of twenty battalions and forty-three squadrons. It did not take the route of Groffenhayn, but marched on the 8th of November from Elsterwerda to Morschwitz, where it passed the Elbe, and then joined Prince Henry's army.

Page 7.

General Fink followed Major General Wunsch to Maxen on the 18th, and not
on

on the 17th of November ; Major General Lindstædt remained near Dippoldiswalda with *four* battalions and one cuirassier regiment, and joined the corps at Maxen on the 18th in the evening, and not on the 19th.

Pages 7 and 10.

It is mentioned that General Sincere's corps, as it was advancing on the 19th from Ruppchen to Dippoldiswalda, discovered General Lindstædt on his march to Maxen. This is a mistake. Instead of General Lindstædt's troops, they were the bread-waggons of General Fink's corps, escorted by two battalions, viz. one of Grabow's, the other of Zastrow's regiments, under the command of Major General Mosel, which arrived on the 18th at Dippoldiswalda, and marched on the 19th to Maxen.

It was on the 19th instant, upon intelligence being received that the Austrians
were

were advancing, that General Platen was detached, with three battalions and a regiment of dragoons, to Reinhardtsgrimma, where he posted himself in such a manner as to keep the village in his front. The battalion of Zastrow joined him in this post as the bread-waggons passed.

Page 12.

General Hulsen did not march sooner than the 20th instant from his cantonments at Sora near Wilsdruf. This corps only advanced to Colmnitz, and the advanced guard of it to Klingenberg. On the 21st, he moved with the advanced guard to Dippoldiswalda, where he found Colonel Kleist.

Page 19.

There was no free battalion posted in Reinhardtsgrimma; General Wunsch had the only one that was with the corps, with him at Dohna. Instead of the free battalion, there were three squadrons of huf-

fars under the command of Major Hauchwitz.

Page 35.

The light troops of Generals Palfy and Kleefeld did not fall on the flank of General Fink's corps in the retreat; and the small number which passed the ravine did not even advance up to Sirsen.

Page 36.

It was not General Hulsen's corps which drove in the advanced posts of General Seckendorf near Dippoldiswalda: but it was a detachment under the command of Colonel Kleist, who was returning from his expedition in Bohemia, and who received orders at Saida to make a diversion in favour of General Fink, by forcing the post of Dippoldiswalda.

This

This corps consisted of

10 squadrons of the dragoons of Schor-lemer.

10 - D* - of the green regiment of hussars.

1 free battalion of Corviere.

Lieutenant Kumpel with fifty men of this battalion, supported by Captain le Grenge with one hundred men and a field piece, surprised in the night an Austrian guard of one hundred men, commanded by a Captain, which was posted in a house near the bridge before the gate of Dip-poldiswalda.—In this surprise some of the Austrians were killed and many taken prisoners, and the assailants entered the town at the same time with those who endeavoured to save themselves by flight. The next day, General Hulfen arrived with his advanced guard, and both Colonel Kleift and the General determined to retreat to

T

Freyberg,

Freyberg, as they could no longer be of any use to General Fink.

Page 166.

There were twenty-two hands of colours taken in the battle of Collin, and the regiment of Prince Charles took seven, and that of Count Bruhl, nine. After Lieutenant Colonel Benkendorf had routed the Prussian squadrons, not only the three regiments of light horse, but also 1000 Austrian cavalry from different regiments, attacked the Prussian infantry, broke in upon them, and determined the victory, which was hitherto doubtful.

R E F E-

R E F E R E N C E S

T O T H E

A R T I L L E R Y T A B L E,

I N S E R T E D B Y T H E T R A N S L A T O R S.

WE have given the distance that the cannon carry the canister-shot, point blank, as it was in the account from which this table was extracted, though *the exact* point blank shot with grape or canister can very seldom if ever happen, because, in order to fire exactly point blank, you must place a sight (called by the artillery, *dispart*) on the muzzle of the piece, equal in height to the difference of the radius behind and before; when you are firing grape or canister-shot you have not time for this.

276 REFERENCES TO THE

The howitzes, which are of equal thickness before and behind, have a hausse fixed on the breech, which in the 16lb. howitzes is two inches, and in the 8lb. is $1\frac{1}{2}$ high.—Over the axis of the bore there is an opening in this hausse, so that you can aim along the barrel to fire point blank, and by aiming along the top of the hausse and the muzzle, you have what the Germans call the *Visir Schuss*, which is explained in a note at the bottom of the table.—In firing grape and canister-shot out of the howitzes, it would be too slow to elevate them with an instrument that shews the degrees, therefore they use a hausse with the inches marked on it, as with the cannon.—The inches of elevation given in this table, in the columns that shew the distances that the howitzes carry canister-shot, are inclusive of the fixed hausse.—In order to find the degree of elevation of the shot at the *Visir Schuss*, you may consider the length of the axis
of.

ARTILLERY TABLE. 277

of the cannon as the finus totus, the difference of the radius before and behind as the tangent of the angle of elevation, and say, "as the length of the gun is to the difference of the radius before and behind, so is the finus totus to the tangent of the angle of elevation."

T 3

EXPLA-

EXPLANATION
OF THE
LETTERS OF PLAN I.

a. **T**HE Austrian main army, in the camp of Plauen.

b. Lieutenant General Angern, with four battalions, near Ruppchen.

General Sincere's corps had remained here till the 19th.

c. General Brentano, near the Rothehaus, or Red House.

d. The army of the Empire, near Giefshubel.

e. The regiment of Hoentzoller, with some croats, near Lang Henersdorf.

f. Prince Stolberg, with six battalions, six companies of grenadiers, and a regiment of dragoons, near Burk-
erdsvalda.

T 4

g. Ge-

- g. General Ried, near Liebſtad and Hutte.
- h. Lieutenant General Palfy, with two regiments of huffars, near Zehiſta.
- i. General Kleefeld, with Croats, Slavonians, &c. near Zoſchendorf.
- k. General Sincere's corps, in the evening, near Maltern.
- l. Camp of the Pruſſian army at Wilſdruf.
- m. The advanced guard, under General Ziethen, at Keſſelfdorf.
- n. Lieutenant General Fink, at Maxen.
- o. Major General Wunſch, at Dohna.
- p. Major General Platen, at Reinhardtſgrimma.

20th Inſtant.

- q. General Platen, at Hauſſdorf.
- r. General Sincere's corps juſt before the attack.
- s. General Brentano's corps, near Rohrdorf.
- t. General Blonquet, with fix battalions, in the evening, near Hauſſdorf.
- u. General

- u. General Seckendorf near Maltern.
- v. Two regiments of cavalry close to the Elbe.
- w. Lieutenant General Palfy with two regiments of huffars, and General Kleefeld with the croats, near Dohna.
- x. Lieutenant General Beck, near Trachau.
- y. The Pruffian General Dierecke, with twelve battalions and 1000 cavalry, near Colln.

EXPLA-

EXPLANATION
OF THE
LETTERS OF PLAN II.

- A. **G**ENERAL Sincere's corps, near
Maktern.
- B. General Brentano's corps, near Rhorf-
dorf.
- C. General Sincere's corps, near Rein-
hardtsgrimma.
- D. The advanced guard of this corps.
- E. Its march in four columns.
- F. Second position of General Brentano's
corps.
- G. Advance of General Sincere's corps
thro' the Reinhardtsgrimma wood.
- H. The extending and formation of this
corps for the attack.
- I. The attack in columns.
- K. The storming of the heights of Maxen.
- L. The

EXPLANATION OF PLAN II. 283

- L. The forming on ditto.
- M. The movement of the cavalry.
- N. Advance of General Brentano's corps.
- O. Second position of General Sincere's corps.
- P. The troops of the army of the Empire, under the orders of Generals Palfy and Kleefeld.
- Q. The corps under Prince Stolberg.
- R. Light troops of the army of the Empire on this side of the ravine.
- S. Light troops of General Sincere's corps.
- T. The taking of General Fink's corps.

- a. General Wunsch, near Blochwitz.
- b. General Platen, near Reinhardtgrima.
- c. General Fink, near Maxen.
- d. General Platen, near Hauffdorf.
- e. Position of part of General Fink's corps against General Brentano.
- f. General Platen's troops retired into the line.

g. Two

284 EXPLANATION OF PLAN II.

- g. Two Prussian battalions, which descended the heights to take the Austrian grenadiers in the flank.
- h. First position of the baggage.
- i. Second D° — D°.
- k. Succours from the right wing,
- l. D° from the left wing,
- m. Attack of the Prussian cuirassiers on General Brentano's corps.
- n. The retreat and formation of these cuirassiers after they were repulsed.
- o. Second position of General Fink's corps.
- p. The last position of General Fink's corps.
- q. The place where the Prussian cavalry attempted to cut through.

} to support the heights of Maxen.

EXPLA-

EXPLANATIONS

OF THE

LETTERS AND FIGURES OF PLAN III.

FIRST POSITION.

1. and 2. **L**IGHT troops in the ravines and wood, to cover the flanks, and rear.
3. and 4. One free and one grenadier battalion, to defend Reinhardfgrimma.
5. and 6. Three grenadier battalions, to defend the ravine of Reinhardfgrimma.

7. 8.

286 E X P L A N A T I O N

- 7. 8. and 9. Ten battalions of infantry.
- 10. Reserve.
- 11. Huffars.
- 12. Dragoons and cuirassiers.
- 13. 14. 15. 16. Batteries.

S E C O N D P O S I T I O N .

- a. and b. Light troops.
- c. and d. A free and a grenadier battalion.
- e. Three battalions.
- f. and g. Right and left wing of ten battalions.
- h. Reserve.
- i. Huffars.
- k. and l. Dragoons and cuirassiers to protect the flanks.
- m. Dragoons and cuirassiers in the center.
- n. o. p. Batteries.

T H I R D

THIRD POSITION.

- A. and B. Patrols and small posts on the flanks, and in the Reinhardtsgrimma wood, consisting of a free battalion, 200 infantry, and some hussars.
- C. H. N. Eight battalions and three strong batteries, for the defence of the heights of Maxen.
- P. Q. and S. Advanced posts of grenadiers and dragoons.
- U. and V. Dragoons in reserve.
- I. and F. Batteries and infantry to defend the débouché of the Reinhardtsgrimma wood.
- O. R. and T. Grenadiers, dragoons, hussars, and cuirassiers, posted for the same purpose.

288 EXPLANATION OF PLAN III.

L. A flank battery for both fronts, and a protection to the retreat.

X. and Y. The retreat.

The rest of the letters denote the principal points of the sections or profiles of the situation, as represented in Plan 4.



TABLE

Of the principal Proportions of the Barrels of the Saxon Field Artillery, and the Distances that the different Pieces carry.

Principal Proportions of the Barrels.

Nature of Ordnance.	Diameter of the Ball.	Length of the Barrel.	Radius of the Barrel.		Distance of the Trunnions from the Breech.
			Behind.	Before.	
Heavy 12-pounder	4" $\frac{3241}{10000}$, or nearly, $\frac{3241}{10000}$	6' : 0" $\frac{481}{611}$, or 6' : 0" . 7141	7" $\frac{2687}{1171}$, or 7" . 79614	6" $\frac{9737}{1708}$, or 6" . 36248	3' : 0" $\frac{2661}{8710}$, or 3' : 0" . 3945
Light 12-pounder	D°.	D°.	6" $\frac{2761}{1708}$, or 6" . 65296	5" $\frac{1847}{1771}$, or 5" . 54726	2' : 9" $\frac{141}{1710}$, or 2' : 9" . 2120
Heavy 8-pounder	3" $\frac{1116}{13300}$, or 3" . 97304	5' : 3" $\frac{1919}{3371}$, or 5' : 3" . 5686	6" $\frac{1191}{1710}$, or 6" . 78415	5" $\frac{1447}{1771}$, or 5" . 62913	2' : 7" $\frac{741}{1710}$, or 2' : 7" . 55040
Light 8-pounder	D°.	D°.	5" $\frac{10677}{11021}$, or 5" . 79089	4' $\frac{11021}{11306}$, or 4' . 81637	2' : 4" $\frac{2187}{1708}$, or 2' : 4" . 8841
4-pounder	3" $\frac{501}{13300}$, or 3" . 14844	4' : 2" $\frac{1266}{1771}$, or 4' : 2" . 3751	4" $\frac{2181}{1708}$, or 4" . 88196	4' $\frac{1131}{1771}$, or 4' . 19719	1' : 10" : 6" $\frac{793}{1708}$, or nearly, 1' : 10" . 50294

A Saxon 16-lb. howitz, the diameter of the bore of which is 8" . 7438, or nearly 8" : 0" : 10 $\frac{1}{4}$ ''' English measure, is, 3' : 9" . 65248 long.—The 8-lb. howitz, whose bore is 6" . 41168, or nearly 6" : 4" : 11 $\frac{1}{4}$ ''' in diameter, is 3' : 0" : . 19760 long.—The windage of the howitzes is one-sixteenth of the diameter of the shell.

- 1 with a mark thus, 1', is one foot.
 - 2 thus, 2'', is two inches,
 - 3 thus, 3''', is three lines (or 12ths of an inch.)
 - 4 thus, 4''', is four points (or 12ths of a line).
- Thus, one mark is feet; two, inches; three, lines; and four, points.

T A B L E

Of the Distances that the Saxon Field Artillery and Howitzes, of each Calibre, carry the different Kinds of Shot, as well Point Blank, as with different Degrees of Elevation; shewing also the Quantity of Powder with which they are charged.

The Weight of the Powder and Ball is given in Saxon Weight, but the Elevation of the Cannon is given in English Inches, and the Distance they carry in English Yards.

Nature of Ordnance.	Quantity of Powder.	Nature of Shot.	Distance of Point Blank.	Vibr. Schuss.	DISTANCES WITH DIFFERENT ELEVATIONS;	
					That of the Cannon being reckoned by Inches, That of the Howitzes by Degrees when Shells are fired, by Inches when Canister Shot is fired.	
Heavy	Round	Round	414 yds.	663	1" . 87408, or nearly 1" : 10" : 6''' - 994	3" . 74816, or 3" : 9" : 1325
						5" . 62221, or 5" : 7" : 6''' - 1656

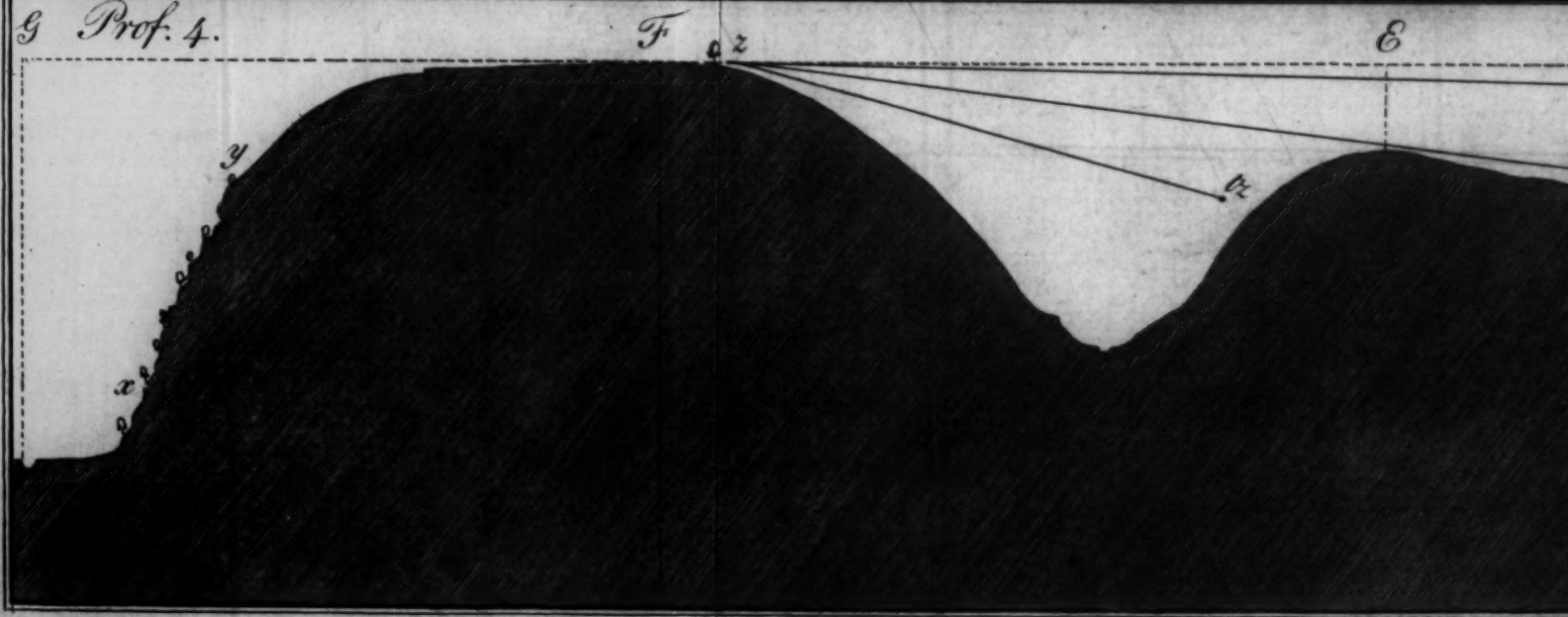
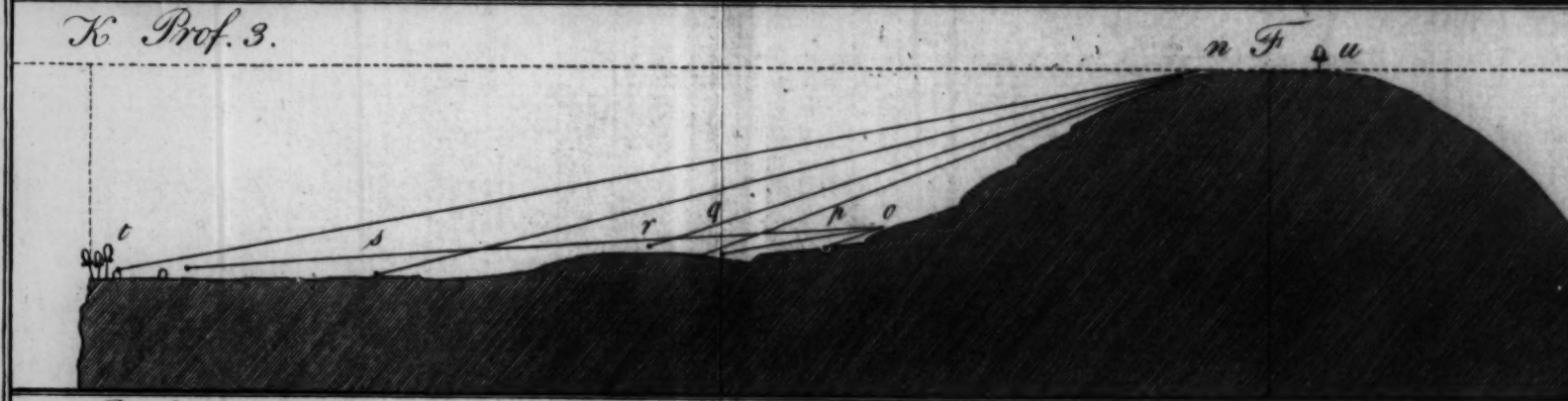
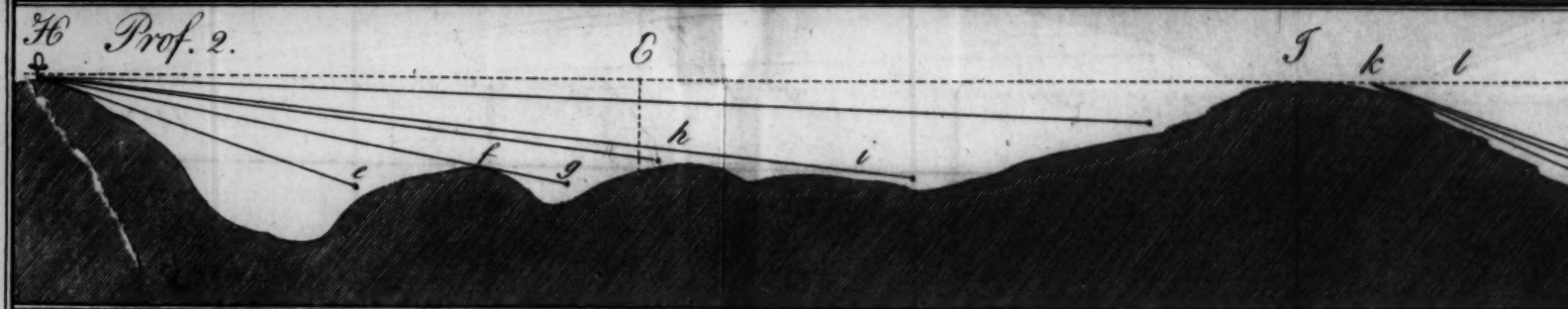
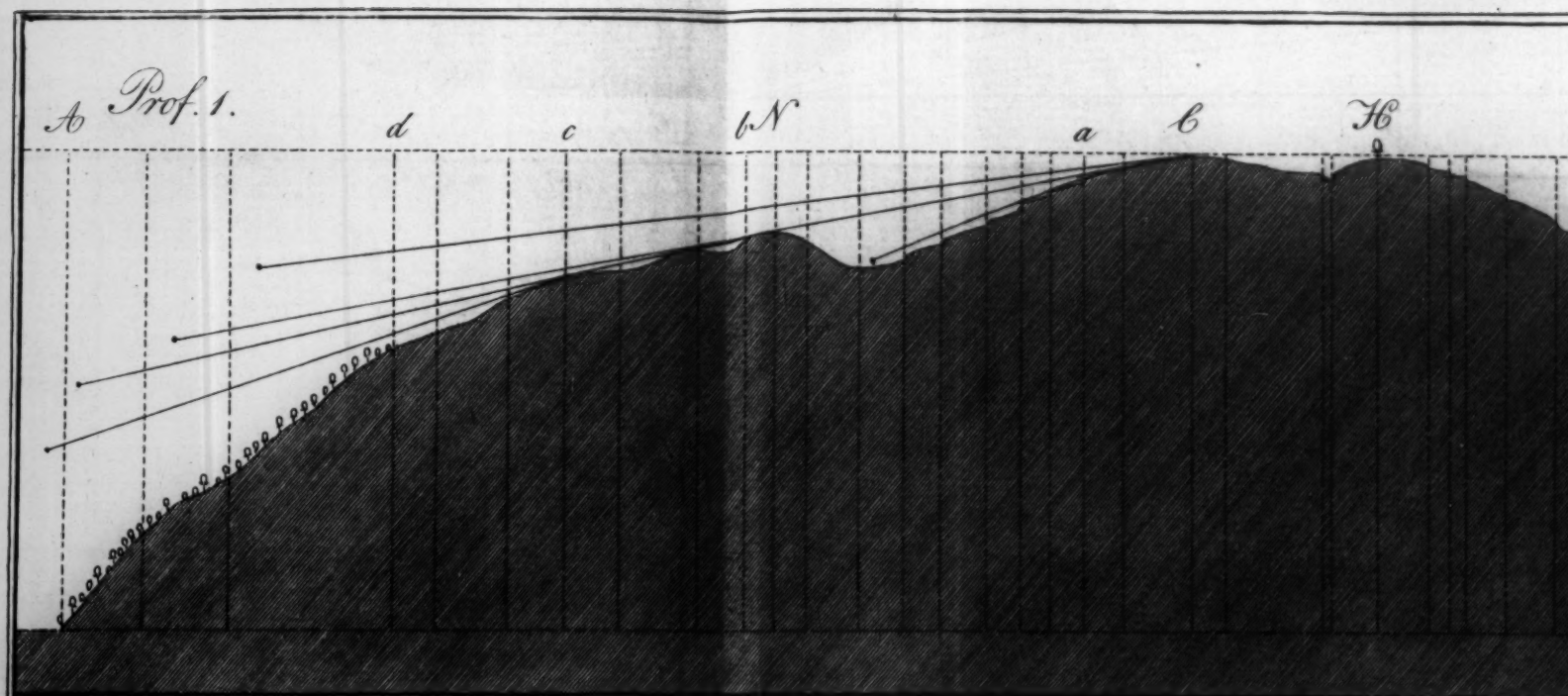
Heavy 12 pounder	5 lb.	Round	414 yds.	663	1". 87408, or nearly 1": 10": 6" — 994	3". 74816, or 3": 9" — 1325	5". 62221, or 5": 7": 6" — 1656				
		Grape	—	580	. 93704, or 11": 3" — 663	2". 81112, or 2": 9" — 994	4". 21668, or 4": 2": 7" — 1325				
		Canister	332	414	1". 87408, or 1": 10": 6" — 497	2". 81112, or 2": 9" — 580	6". 32499, or 6": 3": 11" — 1656				
Light 12 pounder	4 lb.	Round	290	580	. 23426, or 2": 10": 6" — 663	2". 10833, or 2": 1": 3" — 994	3". 74816, or 3": 9" — 994				
		Grape	—	497	. 70278, or 8": 6" — 580	1". 40556, or 1": 4": 11" — 663	3". 27964, or 3": 3": 3" — 580				
		Canister	248	332	. 93704, or 11": 3" — 414	2". 10833, or 2": 1": 3" — 497	3". 27964, or 3": 3": 3" — 580				
Heavy 8 pounder	3 1/2 lb.	Round	332	621	. 23426, or 2": 10": 6" — 663	1". 99121, or 1": 11": 11" — 994	3". 98242, or 3": 11": 9" — 1325				
		Grape	—	497	. 93704, or 11": 3" — 580	1". 87408, or 1": 10": 6" — 663	5". 62221, or 5": 7": 6" — 994				
		Canister	248	332	. 93704, or 11": 3" — 414	1". 87408, or 1": 10": 6" — 497	2". 81112, or 2": 9": 9" — 580				
Light 8 pounder	3 lb.	Round	290	414	. 23426, or 2": 10": 6" — 497	. 46852, or 5": 7 1/2" — 580	. 70278, or 8": 5" — 663				
		Grape	—	414	. 70278, or 8": 6" — 497	1". 63982, or 1": 7": 8" — 580	2". 57686, or 2": 6": 11" — 663				
		Canister	248	332	. 93704, or 11": 3" — 414	2". 34260, or 2": 4": 11" — 497	3". 74816, or 3": 9" — 580				
4 pounder	1 1/2 lb.	Round	290	414	. 23426, or 2": 10": 6" — 497	. 46852, or 5": 7 1/2" — 580	. 70278, or 8": 5" — 663				
		Canister	166	248	. 70278, or 8": 6" — 332	1". 40556, or 1": 4": 11" — 414	2". 45973, or 2": 5": 3" — 994				
		Shell	232	414	3 1/2". 497	4 1/2". 580	10 1/2". 994				
8-lb. Howitz.	1 1/2 lb.	Canister Shot	166	248	3 1/2". 332	5". 414	14". 1325				
		Shell	207	232	3 1/2". 414	4 1/2". 497	7". 663				
		Canister Shot	166	248	4". 332	6". 414	19". 1325 and 30". 1656				

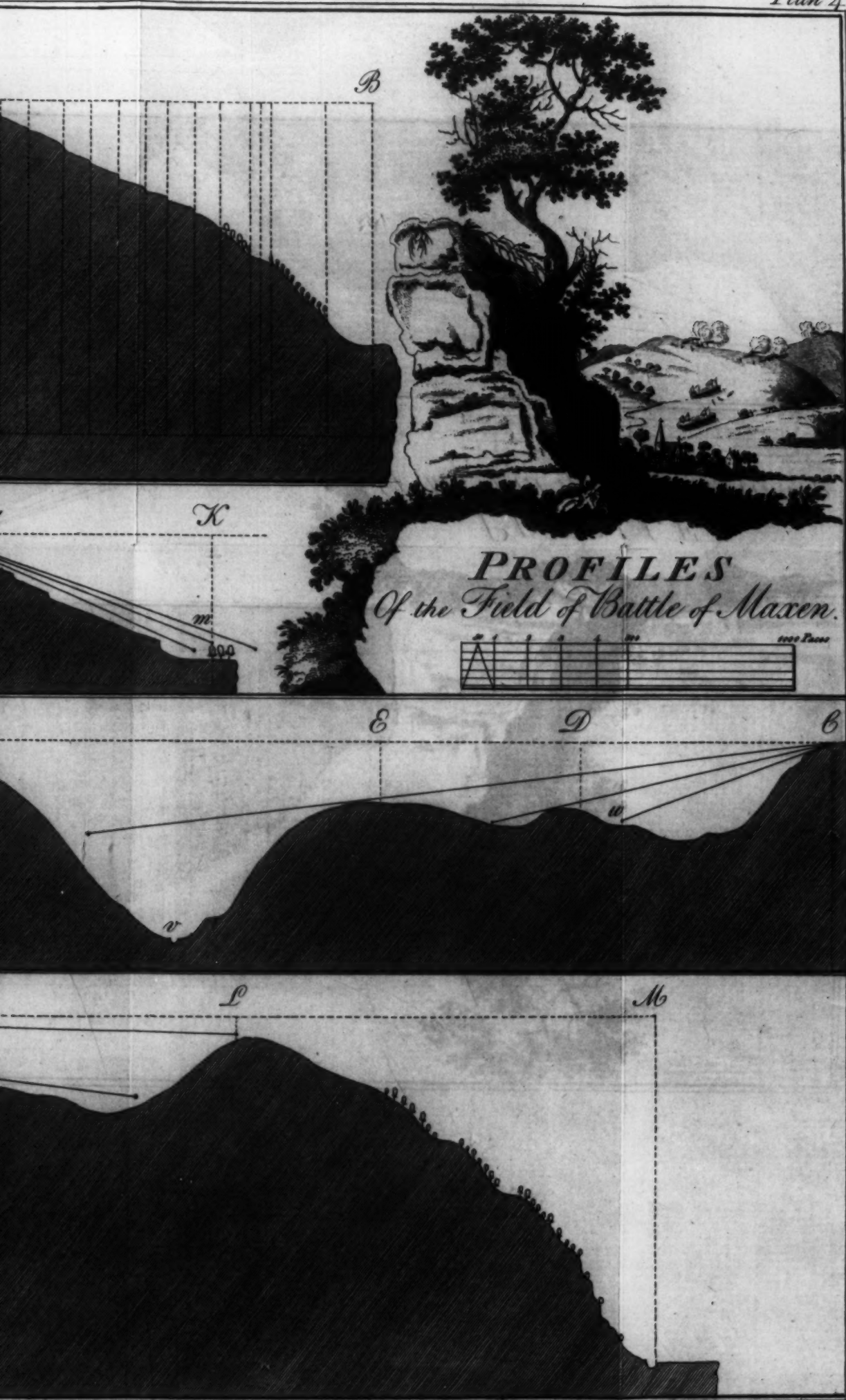
* The Visir-Schufs is a German term, expressive of the shot that is fired by aiming along the barrel of the gun when it is placed in a horizontal direction (that is, without any elevation) without putting a sight (or dispart, as it is called by the artillery) on the muzzle, equal in height to the difference of the radius before and behind. In firing thus, the shot is elevated, though the gun is not, because the exterior line of the metal, and the line of the axis of the bore, in their prolongation intersect each other.



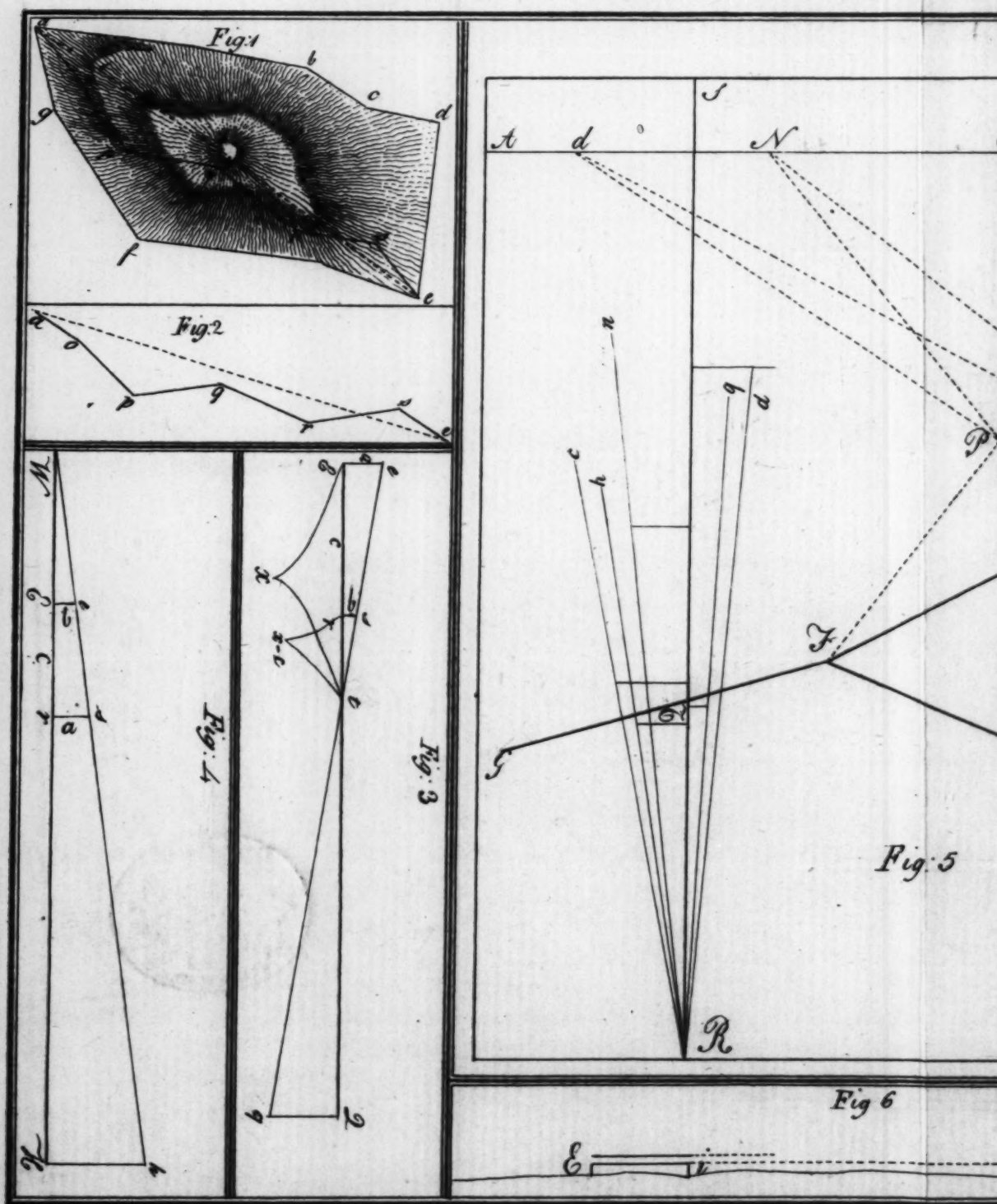
POSITION
Of the Armies, & different detached Corps in
SAXONY,
19th & 20th November 1759.





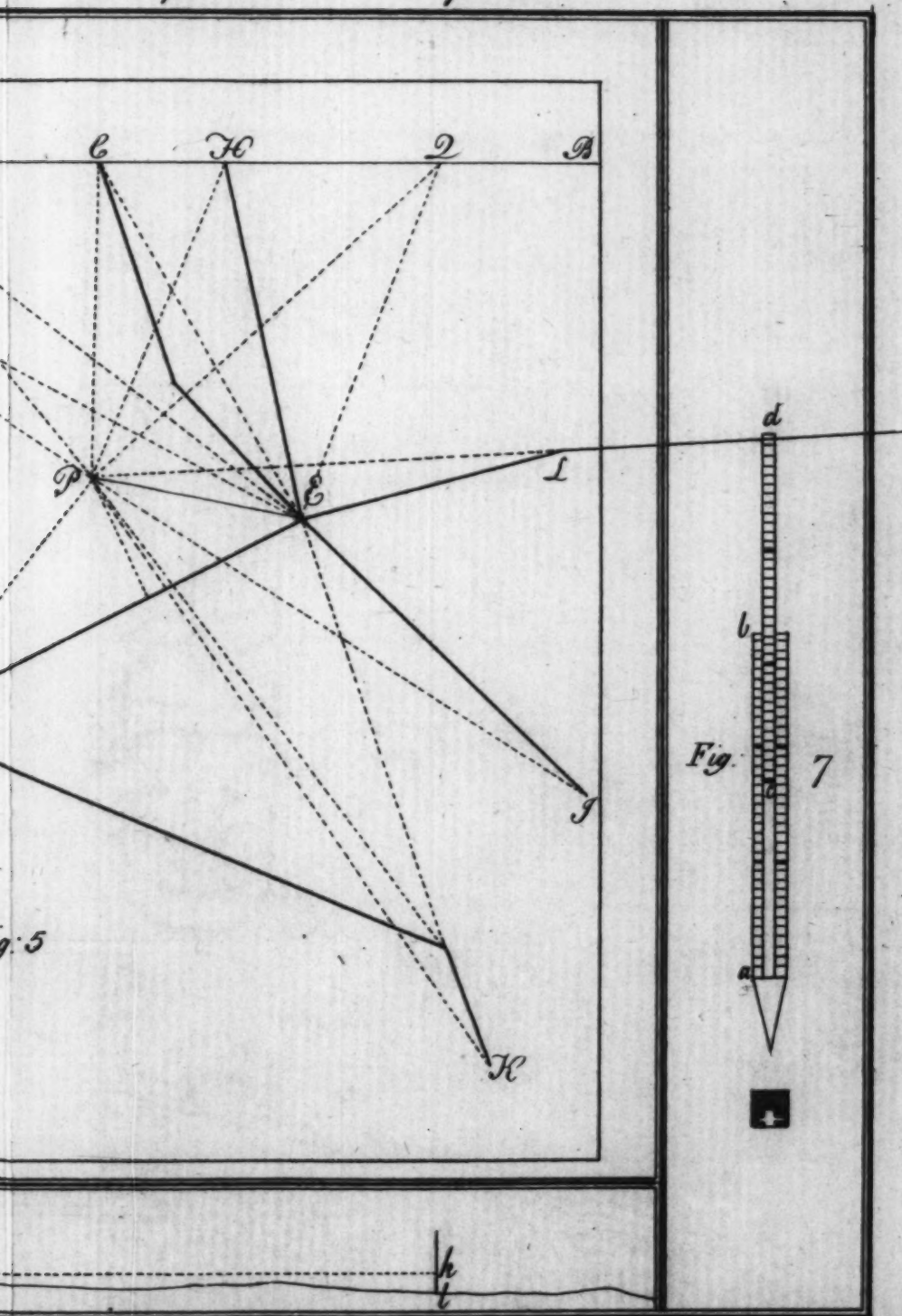


Translator's Plan to illustrate the



the Chapter on Profiles.

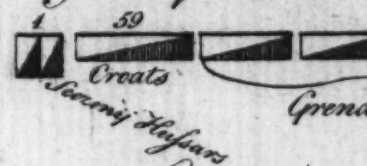
Plan 5.



P. Mazell sculptor.

Order of
Of a Corps of Imperial Troops
COUNTESS

Advanced
Major General



Gen. of Cavalry, Count O'Donel
Lt. Gen. Count Schallenberg
Maj. Gen. Count O'Donel, Count Gourcy

General of
Baron Dom
Hartwegg



Meiss Dragonen Schmerzing Wettach Serbelloni Modena Botta

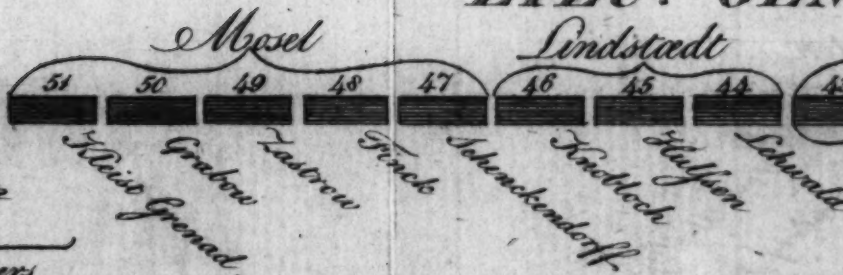
Lt. Gen. Count Stampa
Maj. Gen. Vitzthum, Bettini, Count Steinville



Stampach Zerbst Duna

Order of
Of a Prussian Corps
LIEUT. GEN.

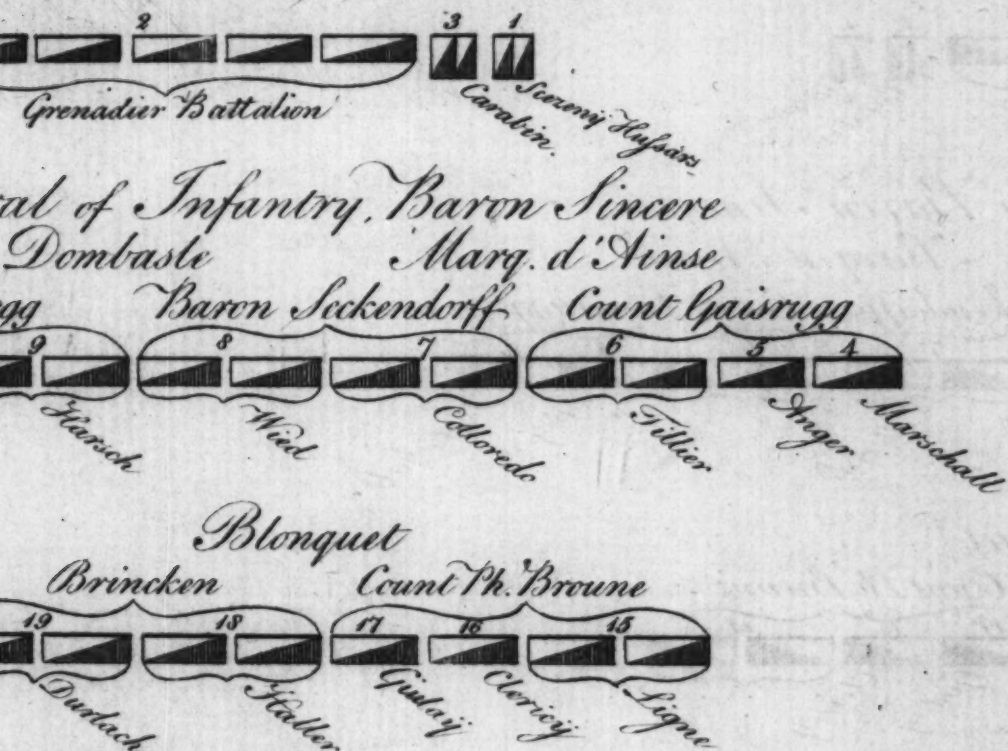
Maj. Gen. Gersdorff Vasold
Gersdorff Hussars
Halen Dragonen
Vasold
Horn
Cuirassiers



Mosel
Kleist Grenad.
Grabow
Zastrow
Finck
Schenckendorff
Kiedtke
Haffner
Schwartz

N^o 1
of Battle
Corps Commanded by Field Marshal

ANT DAUN
Advanced Guard
General Baron Siskowitz



N^o 2
of Battle
Corps Commanded by
GEN. FINK

